

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 786.—Vol. XX.]

LONDON, SATURDAY, SEPTEMBER 14, 1850.

[PRICE 6D.]

### Contract for Coals—General Post-office, France.

NOTICE IS HEREBY GIVEN, that SIX MILLIONS THREE HUNDRED THOUSAND KILOGRAMMES OF COALS being required by the GENERAL POST-OFFICE OF FRANCE, TENDERS will be PUBLICLY RECEIVED, and CONTRACTED upon at the General Post-office, Paris, on the 18th Sept., 1850, at Two o'clock in the afternoon.

The schedule of particulars can be seen at the French Consulate-General's Office, 47, King William-street, City, from Twelve till Four o'clock.

IMPORTANT SALE OF MANUFACTURED IRON, HORIZONTAL HIGH-PRESSURE STEAM-ENGINES, SMITHS' AND ENGINEERS' TOOLS, WOOD PATTERNS, &c., at the POT HOUSE BRIDGE IRON-WORKS, NEAR BILSTON.

MR. R. S. WALKER will SELL, BY AUCTION, on Monday, the 16th day of September, 1850, upon the above premises, by order of the trustees and assignees of Messrs. Arrowsmith and Davis, upwards of THREE HUNDRED TONS OF PUDDLE BARS, from TWENTY-FIVE to THIRTY TONS OF SCRAP BARS, about FIFTY TONS OF MERCHANT IRON, TWELVE TONS OF CASTINGS, including a large fly-wheel, frames for steam-engines and drilling machines, steam and feed pipes, cutter blocks, piston-rings, cylinder, chills, &c.

About TWELVE CWTs. OF SHEAR AND CAST-STEEL, a large assortment of engineers' and blacksmiths' TOOLS, THREE WROUGHT-IRON SHAFTS, HEAD BOXES, BORING TOOLS, &c.

One each 6 and 10-horse power HORIZONTAL HIGH-PRESSURE STEAM-ENGINES, nearly complete.

ONE BOILER, for 10-horse power engine.

An assortment of steam cocks, cotter steel, joint pins, new files and rubbers, quantity of lashing chains, nails, &c., air-pump, bucket, new block rope, &c.

Also, about TEN TONS OF CALCINED POTTERY PUDDLING MINE, FIVE TONS OF RED CUMBERLAND ORE, FIFTEEN TONS OF DURHAM COKE, and THIRTY TONS OF CALCINED CINDER.

A large and valuable assortment of ENGINE and other WOOD PATTERNS, several OFFICE FIXTURES, and numerous articles connected with the trade—particulars of which are described in catalogues now in circulation, which may be had at the place of sale, or of the auctioneer, Red Lion-street, Wolverhampton.

On account of the number of lots, the sale will commence precisely at Eleven o'clock in the morning.

SHROPSHIRE.—VALUABLE FREEHOLD ESTATES AND MANORS.

In the Parishes of CHIRBURRY and HYSSINGTON, in the County of SALOP.

MR. THOMAS EDWARDS will SELL, BY AUCTION, at the Fox Inn, SHREWSBURY, on Thursday, the 26th day of September, 1850, in one or more lots, and subject to conditions to be then and there produced.

Sale to commence at Five o'clock.

IN THE PARISH OF CHIRBURRY.

LOT I.—All that capital MESSAGE, BUILDINGS, and LANDS, called KINTON FARM, containing 206A. 3a. 39r., or thereabouts, and now in the occupation of Mr. John Gittins, together with 536 acres of open COMMON LAND; and also the MANOR OF MIDDLETON, and the several ROYALTIES appertaining and belonging thereto, which extend over an area of 1947A. 3a. 33r., together with the MINES and MINERALS lying under the same, but subject to the existing lease to Messrs. Ward and Co., under part of the property.

Also, sundry SMALL TENEMENTS and LANDS, on and adjoining the before-mentioned commons, now or late in the several occupations of Thomas Whetzel, Richard Lee, Thomas Montford, Joseph Whetzel, James Nicholas, late John Rudge, John Humphreys, Thomas Clare, William Cross, and George Swaine, containing together 13A. 1a. 9r.; likewise that portion of a certain POOL OF WATER, which lies within the Manor of Middleton, and occupied by the White Grit Mining Company.

This lot forms a most desirable investment, either to the agriculturist or mineralogist. The farm lies within a ring fence (except one small close), and is capable of great improvement. It is bounded by the estates of the Earl of Powis and Sir Offley Penbury Wakeman, Bart., which are strictly preserved; also by those of George Pritchard, Robert Bridgeman More, and Edward Smith, Esqs.

The Grit Mines, which belong to H. B. More, Esq. (and which are now in full work), extend this lot—the steam-engine being within a few yards of the property, and a great quantity of ore is now being raised from the vein adjoining the boundary line, and which vein runs into this manor, and is the favoured point remarked upon by Sir Roderick Impey Murchison in his geological work of this part of Shropshire, where no doubt great body of ore exists.

There is an excellent Rabbit Warren on Middleton-hill, and a great portion of the commons will do well for cultivation.

LOT II.—All that FARM and LANDS, called MIDDLETON, now in the occupation of Mr. Vincent Freese, containing 42A. 2a. 10r., or thereabouts; together with a newly-erected COTTAGE, with a CLOSE of LAND, held by John Gittins.—Also, a FIELD of LAND, at present occupied with the sheepwalk, and open thereto, containing 3A. 3a. 37r., together with TWO other TENEMENTS, in Middleton Batch, in the respective occupations of John Mellings and Richard Embrey, containing 5A. 0a. 2r., or thereabouts. This lot is principally surrounded by the estates of George Pritchard, Esq.; it also puts upon Messrs. Shaker and Knight's lands.

LOT III.—All that MESSAGE, BUILDINGS, and LANDS, near Medge's Fold, now in the occupation of Ann Lewis, containing 3A. 1a. 16r.

LOT IV.—All that MESSAGE, BUILDINGS, and LANDS, called MEDGE'S FOLD, the occupation of John Price, containing 3A. 2a. 32r., or thereabouts.

LOT V.—All that FARM and LANDS, called STAPLEY, in the occupation of Mrs. Anna Montford, containing 14A. 3a. 12r., or thereabouts; also, all those TWO MESSAGE, BUILDINGS, and LANDS adjoining, in the respective occupations of Robert Agth and John Edwards, containing together 3A. 2a. 28r., or thereabouts.

LOT VI.—All that FARM, BUILDINGS, and LANDS, called STAPLEY, in the occupation of Mr. Aaron Evans, containing 17A. 1a. 25r., or thereabouts.

LOT VII.—All those TWO PIECES, or PARCELS, of LAND, adjoining Stapley Farm, now occupied by Jeremiah Francis, containing 3a. 28r.

The last-named five lots are desirable investments for the small capitalist, or persons wishing to secure votes for the southern division of the county of Salop.

IN HYSSINGTON PARISH.

LOT VIII.—All that MESSAGE, BUILDINGS, and LAND, called the APPLE TREE TENEMENT, with the LAND lately added thereto, and now in the occupation of John Amond, containing together 2A. 2a. 4r.; also all that other MESSAGE and CLOSE of LAND adjoining the same, in the occupation of Edward Wellings.

This lot is near the Grit Mines, and adjoins the turnpike road leading from Bishop's Clee to Shrewsbury, and is a desirable spot for a small inn or shop.

LOT IX.—THE MANOR or LORDSHIP OF MUCKLEWICK, extending over an area of 534A. 0a. 14r., and the several ROYALTIES appertaining and belonging thereto, with MINES and MINERALS lying under the same, but subject to the existing lease to Messrs. Ward and Co., of the mines under part of the property; together with the several ROYALTIES appertaining and belonging thereto, and set out under the Hyssington and Mucklewicks Inclosure Act.

THE VEIN OF ORE, which is now worked by the Grit and Gravel Mining Company, sees these commons, which lie only about a quarter of a mile from the engine, and the up-pike road from Bishop's Clee to Shrewsbury passes over the said commons.

Plans and particulars may be had by application to Messrs. Robinson and Overy, solicitors, 13, Tokenhouse-yard, London; Messrs. Mickleburgh and Son, land agents, Montgomery; Thomas Norton, Esq., solicitor, or to Mr. Thomas Edwards, the auctioneer, of Shrewsbury.

PAST OF SCOTLAND MALLEABLE IRON-WORKS.

TO BE EXPOSED TO SALE, BY PUBLIC AUCTION, within the TOWN-HOUSE, DUNFERMLINE, on Wednesday, the 24th October next, at One o'clock afternoon, EAST OF SCOTLAND MALLEABLE IRON-WORKS, at DUNFERMLINE, consisting of A STEAM-ENGINE, of 80-horse power, working the machinery, consisting of AGE and 2 PUDDLE BAR TRAINS, of 16 inches diameter, HAMMER and PATENT ROLLING MACHINE, also a 16-inch MERCHANT BAR or RAIL MILL, a 13-inch L. for ordinary sized merchant bars, and an 8-inch GUIDE MILL, 13 FUELING PLACES, and 6 MILL FURNACES, the whole capable of producing 130 tons of iron weekly.

REFINERY STEAM-ENGINE, of 45-horse power, with blowing apparatus, complete, and two fires erected.

A complete SET OF WORKSHOPS, containing a 20-horse power STEAM-ENGINE, driving a powerful ROLL TURNING LATHE, and blowing apparatus for smiths' fires.

A PUMPING and CLAY MILL STEAM-ENGINE, of 16-horse power, used for the manufacture of fire-brick and pumping water for supply of engines.

Also the ESTATE of TRANSY, consisting of about 107 Imperial acres, with elegant MANSION-HOUSE and PLEASURE GROUNDS, situated about half a mile to the east of the town of Dunfermline.

Should the above not be disposed of in one lot, the works will be put up separately. If sold, the estate will also be exposed separately.

The purchaser of the works will have it in his option to take all the necessary tools, machinery, and stocks of different kinds, at a valuation.

There will also BE SOLD, A STEAM-ENGINE, of 80-horse power, intended to drive rolling mills, apart from the forges, with strong cast-iron framing and relative machinery.

For further particulars application may be made to Mr. James Inglis, the Chairman of Board of Management; or to Johnstone, Russell, and Craig, writers, in Dunfermline, whose hands may be seen the title deeds of the lands and articles of roup.

Dunfermline, Sept. 4, 1850.

MR. JAMES CROFTS, of No. 4, KING-STREET, CHEAPSIDE, is encouraged to renew his recommendations to CAPITALISTS to turn their attention to BRITISH MINING PROPERTY, as a safe MEDIUM for INVESTMENT at the present moment in particular—an unprecedented increase having taken place in the productive class of mines, solely owing to the application of capital and improved modes of working.

Mr. CROFTS can procure SHARES in all the MINES of repute in the Tarncliffe District, and has FOR SALE specially—Lilymaleos (10 shares), Wheel Langford (50 shares), Heigston Down Consols, Engair Lee (25 shares), West Seton (1 share), Wheel Seton (1 share), East Sharp Tor (2 shares), and in all the dividend mines; also Clambawn, Wheel Banny, Lambrover Wheel Maria, Wheel Vincent, and Wheel Sarah.

\* \* Mr. CROFTS is only a purchaser of shares for principals.—Sept. 14, 1850.

MR. EVAN HOPKINS, C.E., F.G.S., CONSULTING MINING ENGINEER, OFFICE, No. 13, AUSTINFRIARS, LONDON.

Mr. HOPKINS may be consulted daily by Noblemen, Gentlemen, and Capitalists, who have invested, or may wish to invest, their capital in MINES or MINERAL PROPERTIES, on all matters connected therewith (Home and Foreign).

\* \* Every description of Mineral Property inspected and reported on, and distant capitalists may receive periodical advice, in the German, French, and Spanish Languages.

N.B.—Managers and Directors of Mines, as well as Mining Captains, will find Mr. Hopkins's office convenient for reference on all matters connected with mining, as he has all the Maps on the Geology and Mines of the United Kingdom, the majority of which are from his own observations. The emigrants to California and other gold districts are also furnished with instructions on good mines, deposits, and machinery for the same.

MESSRS. CROFT, FULLER, & CO., 1, Royal Exchange-Buildings, have A FEW SHARES in SOUTH CARN BREA FOR SALE.—This set is in decidedly the best metalliferous district in Cornwall, being situated between Carn Brea, £15 paid, and worth £130; Wheal Bassett, £24 paid, and worth £300; North Bassett and Wheal Buller (opened about 18 months since), £10 paid, and worth £550.

The cost-book and general superintendence will be under the same able management as Carn Brea, which has divided about £1200 per cent. upon the sums invested, and the sales of ore during the past quarter have realised upwards of £14,000.—(See Mining Journal of July 6).

Messrs. C. F. & Co. can also TRANSACT BUSINESS in the following MINES:—

Great Devon Consols, Trevellick, Wheal Fortescue, Wheal Venton, Exmoor Wheal Eliza, Wessington Consols, Modocum, Wheal Hamlyn, Wheal Harris, Wheal Fortescue, United Mexican—National Brazilian, &c.

MINING AND GENERAL AGENCY OFFICE, No. 52, THREADEDELL-STREET, LONDON.

MR. B. TREDINICK begs to inform his Friends and the Public of his REMOVAL to the above COMMODOUS ROOMS, in the Hall of Commerce, where he purposes to hold, in addition to his general Agency Business, PERIODICAL SALES, BY AUCTION, OF SHARES in MINES, RAILWAYS, BANKS, CANALS, INSURANCE, and OTHER COMPANIES; also Reversions, Annuities, Bonds, &c., together with Estates, Houses, and Property of every description.

SHARES BOUGHT AND SOLD ON COMMISSION, and MONETARY MATTERS of every kind NEGOTIATED; Statistical and General Information afforded gratuitously, upon personal application.

Mr. T. offers to the mining world the opportunity of exhibiting in his Public Sale Rooms, Reports, Plans, Sections, and Specimens of Mines and Mineral Districts, whether situated in the United Kingdom, Foreign, or Colonial Possessions, upon forwarding the same, free of expense; as also Plans, Sections, &c., of Estates, Houses, and other Property for Sale.

COURT GRANGE SILVER-LEAD MINES.—TO BE SOLD, ONE EIGHTEENTH PART, or SHARE, OF THE ABOVE MINES, guaranteed free of all cost—(and conducted upon the Cost-book Principle).

The silver-lead vein of Cardiganshire, comprising Pen-y-Cefn, East Pen-y-Cefn, and Lletten-hin Mines, with a complete field of machinery in excellent condition, and an abundant water-power. They are held on lease under the Right Hon. the Earl of Lisburne—about 10 years of which are unexpired.

The mines are at present in full operation. "The returns per month will not be less than 30 or 40 tons, which will lead a profit of 150% per month, with every prospect of a great increase."—(See the "City Article" in this Journal of the 17th inst.)

A complete and abstracted copy of the conditions, and the rules and regulations of the company may be seen, and further particulars be obtained, on application to Mr. Wm. Trenery, mine and sharebroker, No. 9, St. Michael's-alley, Cornhill; also to Mr. H. Von Uster, 22, New Bridge-street, London.

BICTON CONSOLS, situate in the parish of LINKINHORNE, COUNTY OF CORNWALL.

Divided into 1024 shares.—Deposit £2 5s. per share.

The LOCALITY of this SETT, together with the relative position which it bears to the Trelawny and other productive Lead Mines of the district, is too well known to require further description than given in the following

REPORT.

Bicton and Scrawden sett (now called Bicton Consols), is situate in St. Ives, Cornwall, and is one of the most extensive setts in the district; it lies in kilies, between the granite ranges of Caradon and Heigston, in the centre of an extensive and tried mining district, having in the north and west the Caradon and Phoenix Mines, and on the east the Holmbush and Callington Mines, and is to the north of Trelawny, Mary Ann, Trebace, &c., run of lead mines. Three large north and south lead lodes have been cut; the eastern of these is 6 feet wide, 4 feet of which is goosan, and the remaining 2 feet a very fine flokan. The next lode is about 50 fathoms further west, very similar in character, and is about 4 feet wide. The third lode is about 80 fms. further west, of a similar character, and about 2 feet wide. These lodes have been traced a mile in the sett. It is impossible to see finer indications of the surface than those lodes present, and the district being a proved one, there is every probability of their producing abundance of lead.

(Signed) SAMUEL RICHARDS, Trebace Mine. ROBERT DUNSTON, West Caradon. SAMUEL SECCOMB, Phoenix Mines. JOSEPH KEMP, Trelawny.

The testimony of the above experienced and well-known agents, now conducting the most productive and best dividend-paying mines in the locality, is considered a sufficient guarantee as to the probability of a favourable result.

A large portion of the shares have been disposed of in the neighbourhood of the mine, and application for the remaining shares may be made to Mr. James Lane, No. 80, Old Broad-street, London.

CRAIG-Y-MWYN LEAD MINES, LLANRHAIDR, MONTGOMERYSHIRE.—The proprietors of these mines having intersected two veins of ore, of great value, are desirous of WORKING them by means of a PUBLIC COMPANY. The lease is for 21 years, from the Earl of Powis, at a royalty of 1-10th, and comprises about ONE THOUSAND ACRES OF MINERAL LAND, on which three Lead-bearing veins are now worked. The north vein, containing solid ore, 2 feet wide, resting upon a bed of loose ore, about 13 inches wide, proved for 10 fathoms, intersected by three levels, at the depths of 120, 160, and 180 yards, all cut into the ore, and will shortly be further intersected by a level driven 53 yards lower.

Parallel with this vein, at the distance of 10 yards, a vein is now being worked, 9 feet wide, and beginning to show ore of great promise.

The south vein has been cut into by a level 240 yards—extracting solid blocks of ore, from 3 to 4 cwt., and will shortly be intersected at a further depth of 50 yards.

These works require no machinery whatever for getting.

The ore is of great purity, selling at £11 per ton. The mine will be divided into 1600 shares—900 of which are taken up, leaving 700 for disposal, on which £2 per share is to be paid on receipt of scrip. The lead on bank, about 50 tons, will be available for a first dividend to shareholders joining during this month.

Applications for shares to be made to Bell Williams, Esq., land agent, 16, Castle-street, Liverpool; or to Mr. James Lane, mine agent, 80, Old Broad-street, London, where plans, reports, and sections of the works can be seen; copies of the reports may also be obtained at the office of the Mining Journal, 26, Fleet-street, London.—Sept. 3, 1850.

LOCOMOTIVE ENGINES.—ON SALE.—SIX NEW LOCOMOTIVE PASSENGER ENGINES and TENDERS; particulars as follows:—Outside cylinders 15 in. diameter, and 22 in. in stroke; driving wheels 6 feet diameter; leading and trailing wheels 3 feet 6 inches diameter. All the wheels entirely of wrought-iron. Strong copper fire-boxes, with 68 feet of heating surface, and 120 tubes, 10 feet 5 inches long, and 2 inches outside diameter. The tenders are made to hold 1000 gallons of water, with well constructed framing, all of wrought-iron, and are carried on six wheels, 3 feet 6 inches diameter, of wrought-iron, with cast-iron centres.

The whole of the workmanship is of the very best description, and the price very moderate.—For further particulars apply to the makers, Messrs. Benjamin Hick and Son, Solihull Iron-Works, Bolton; or to Mr. Josiah Kearsley, at the office of Messrs. B. H. and Son, 1, New Broad-street, City, London.—July 28, 1850.

PROTECTION FROM FIRE AND THIEVES.—The ELECTRIC INDICATOR (BUTTER'S PATENT), suitable for Buildings of every description, gives instant notice of the entrance of a Burglar, or the commencement of a Fire. May be seen in operation at the Sole Licensees, Horne, Thornthwaite, & Wood, opticians, 128, Newgate-street, London.—A descriptive pamphlet, price 2s.

WANTED, in an extensive COLLIERY CONCERN, a properly qualified person, as COLLIERY BAILIFF, being well acquainted with Sinking Pits and Coal-getting generally. No person need apply who cannot produce unexceptionable testimonials as to strict sobriety, integrity, and experience in colliery works.—Application to be made by letter, to "A. B.," at the office of the Mining Journal, 26, Fleet-street, London.

TO COAL HEWERS.—WANTED, at WHITWELL COLLIERY, 2 miles from the city of DURHAM, a NUMBER OF COAL HEWERS and PUTTERS.—Apply at the office, at the colliery. Whitwell, Durham, Sept. 10, 1850.

TO IRONFOUNDERS AND SMITHS.—TO BE LET, in SOUTH STAFFORDSHIRE, an old established IRONFOUNDRY and PREMISES, consisting of five commodious casting shops, with cranes and stores, complete; 2 cupolas, air-furnace, a very convenient wharf, with 10-ton crane, a spacious smiths' shop, with 14 hearths, engine-power and offices, together with every facility for carrying on an advantageous trade. The present proprietor is leaving in consequence of having other engagements.—Apply by letter, stating real name and address, to "A. B.," Mr. Joseph Price, Cherry-street, Birmingham.

TO CAPITALISTS, OR A JOINT-STOCK COMPANY.—TO BE SOLD, A LEAD MINE—Lease 21 years. Mineral Land 3 square miles in the richest part of North Wales, being near to a work which yielded £40,000 per ann. for 50 years. The proprietor (engaged in mining about 30 years) would take an interest, and, if agreeable, the management.—For particulars address "A. B. C.," care of Mr. Vaughan, Llanrhaidr, near Oswestry.

ON SALE.—THREE STEAM-BOILERS, quite New, never having been in use: one 30 feet long, 6 feet 6 inches in diameter; one 28 feet long, 6 feet 6 inches in diameter; one 26 feet 6 inches long, 6 feet 6 inches in diameter. Also a BLOWING CYLINDER and APPARATUS, complete, equal to 6 feet diameter, and 6 feet stroke.—Application to Mr. Robert Heath, Clough Hall Colliery, near Newcastle, Staffordshire.

FOR SALE.—A 70-inch PUMPING-ENGINE, with TWO BOILERS, at WHEAL RUBY MINE, near the port of Penryn, Cornwall. Apply to Mr. T. H. Edwards, Helston.

STEAM-ENGINE AND PUMP FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, an excellent single-acting ENGINE, 9 feet stroke, 30-inch cylinder, with boiler and spare boiler, each about 8 tons, fitted with 30-inch plunger pump, having all the necessary working gear for a 55-foot lift, and including the engine-house and its fittings, if required.—Application to be made to Mr. Helias, at the New Keyham Steam Yard, Devonport, where the engine can be seen, and further particulars be obtained.

MORTGAGE.—WANTED, the sum of EIGHT THOUSAND POUNDS, on MORTGAGE of one of the most valuable COAL PROPERTIES in the Kingdom—held on a long lease, upon most favourable terms. To Principals and their Solicitors the most ample and satisfactory details will be furnished, on application to "S. B. J.," 10, North-place, Gray's Inn-lane, London.

MONEY.—SUMS from THREE HUNDRED to FIFTEEN THOUSAND POUNDS to be ADVANCED on MORTGAGE of FREEHOLD, LEASEHOLD, COPYHOLD, REVERSIONS, MONEY in the FUNDS, and on approved MINING and RAILWAY SHARES, and on DEBENTURES, and MONEY NEGOTIATIONS generally EFFECTED.—Apply to Mr. Dickinson, 2, Cannon-row, Parliament-st.

MINING OFFICES, PYDAR STREET, TRURO.—MR. HENRY LOWRY will be happy to receive commissions for the PURCHASE or SALE OF SHARES in MINES, and from his thorough acquaintance with this description of property, and the moderation of his charges, he hopes to give perfect satisfaction to those who may favour him with their commands.—Truro, Sept. 9, 1850.

MINING OFFICES, No. 9, ST. MICHAEL'S-ALLEY, CORNHILL, CITY (established 20 years).—WM. TRENER begs respectfully to inform the Public that he is at all times in a position to BUY or SELL SHARES in most of the DIVIDEND-PAYING MINES; and being a native of Cornwall, he is always ready to give the best information respecting mining property in general.

MINING PROPERTY.—MR. HERRON has SHARES in the best DIVIDEND MINES FOR SALE, and which will give to the purchaser 17 to 25 per cent. for the outlay; amongst others are the following:—Devon Great Consols, East Wheal Rose, Trevelick and Barriar, West Caradon, Wheal Trelawny, Wheal Mary Anne, Tincroft, Carn Brea, Alfred Consols, Wheal Tremayne, Holmbush, Callington, Stray Park, South Bassett, North Pool, and South Wheal Frances Mines—St. John del Rey, Impetor Brazilian, Colbre, Royal Santiago, Coe and, and United Mexican Mines.

MINING OFFICES—38, CLEMENTS-LANE, LOMBARD-STREET.

MINING PROPERTY.—BUSINESS transacted in every description of MINING PROPERTY, SHARES BOUGHT and SOLD, ADVISE GIVEN TO PARTIES as to INVESTMENT, ADVANCES OF MONEY MADE on this DESCRIPTION OF PROPERTY, Statistics given on Mines, and the earliest information obtained from the mineral districts.—Apply to DURRANT & CO., Mining Sharebrokers, 58, Lombard-street.

MINING PROPERTY.—Messrs. BROWN & CO., of No. 16, FENCHURCH-STREET, LONDON, beg to call the attention of Capitalists from Railways to MINES, as the most SAFE and PROFITABLE MEDIUM OF INVESTMENT.

Messrs. BROWN & CO. can procure SHARES in all the MINES in CORNWALL and DEVON, and has on hand Shares in the following Mines:—Devon Great Consols, Wheal Franco, South Plain Wood, Hawkmoor, Wheal Russell, Wheal Fortescue, Wheal Harris, Wheal Venton, Wheal Hamlyn, West Wheal Friendship, Lewis, Tincroft, South Carn Brea, National Brazilian, United Mexican, &c.

MR. R. TRIPP, MINING AGENT, is instructed to BUY and SELL in most of the best DIVIDEND-PAYING MINES; also in NEW ONES, having present and prospective advantages, including—Devon Great Consols; Wheal Margaret, South Wheal Frances, West Caradon, South Caradon, Mary Ann, Trelawny, Wheal Tremayne, Alfred Consols, Comfort, Holmbush, Tincroft, Tamar Consols, Treleigh, Tre-coll, North Bassett, Trevelick, near Lewannick, &c., Mines.—FOREIGN: St. John del Rey, Linares, and Santiago Mines.

Railway Shares Bought and Sold at the market prices.

MINING AND SHARE OFFICES. ST. MICHAEL'S CHAMBERS, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.

MESSRS. BOXALL & CO., MINING SHARE DEALERS, 5, CROSBY HALL CHAMBERS, BISHOPSGATE-STREET.

MESSRS. WATSON & ENSOR, MINING AGENTS, 4, TOKENHOUSE-YARD, LOTHBURY, LONDON.

JAMES LANE, MINING SHARE DEALER, 80, OLD BROAD-STREET, LONDON.

COPIAFO MINING COMPANY.—Notice is hereby given, that a DIVIDEND OF EIGHT SHILLINGS per share will be PAID on the shares of this Company, at the office, 22, Austinfriars, on Monday, the 14th October next, and following days. The dividend warrants are required to be left at the office two days for examination.—Please call between the hours of Twelve and Two.

By order of the directors, ROBERT CLARK.

22, Austinfriars, August 14, 1850.

KINZIGTAL MINING ASSOCIATION.—NOTICE OF CALL.—Notice is hereby given, that the Directors of the KINZIGTAL MINING ASSOCIATION have this day made a CALL of FIVE SHILLINGS, or Three Florins, per share, and have appointed such call to be paid on or before Wednesday, 23rd Sept. next, to their bankers.—LONDON: Messrs. Masterman, Peters, and Co.

STUTTGART: Messrs. Doertenbach and Co.

By the statutes of the Association, interest at the rate of 5 per cent. will be charged upon all sums in arrear after 25th Sept. next.

By order of the Board, GEO. COPELAND CAFFER, Secretary.

1, Adelaide-place, London-bridge, Sept., 1850.

TAMAR SILVER-LEAD MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders of this Company will be HELD at this house on Monday, the 7th day of October next, at Two o'clock precisely.—Salvador-house, London, Sept. 12, 1850.

TRELEIGH CONSOLIDATED MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders will be HELD at the office, as under, on Wednesday, the 2d of October next, at Twelve o'clock precisely.

WM. NICHOLSON, Secretary.

57, Old Broad-street, Sept. 12, 1850.

WHEAL MAY MINING COMPANY.—A SPECIAL GENERAL MEETING of the shareholders in this Company will be HELD at the Rose and Crown Tavern, 66, Old Broad-street, London, on Friday next, the 20th of September inst., at Two o'clock in the afternoon precisely, for the purpose of considering the Reports of the Mine, and determining at once the urgent necessity of erecting a engine, and on general and important business.

HENRY PEET, Secretary.

London, Sept. 13, 1850.

MINING ALMANACK for 1850.—THE SECOND VOLUME

of this publication is now ready, with Original Articles and Statistical Matter up to latest period.—Price 6s.

London: Published at the Office of the Mining Journal, 26, Fleet-street.



**LAW OF LIABILITY UNDER THE WINDING-UP ACT.**—As considerable misconception on the present state of the law appears to exist as to who are liable and who are not under the provisions of the Joint-stock Companies' Act, it may be useful to know that all those persons who merely gave their formal consent as provisional committee-men, but who took no part in the affairs and subscribed for no shares, though they may afterwards have contributed to the discharge of debts, are not considered liable, but that all those who accepted shares, even though they did not pay the deposit, are declared to be contributors from the date of the acceptance of such shares, and to the extent of the interest represented by them in the company. As regards allottees, all those persons are held to be contributors who subscribed the agreement, who paid the deposit, and who applied for shares, and to whom they were allotted unconditionally. This law will now be adopted by the 10 Masters in Chancery, who hitherto have greatly differed in their decisions.

**THE MARYLEBONE JOINT-STOCK BANK.**—The affairs of this bank, the stoppage of which, it will be recollected, caused considerable sensation, are now under the jurisdiction of the Winding-up Act, upon the petitions of shareholders, who state that it was formed with establishments in Cavendish-square, Bucklebury, Finsbury, and at Reading, with a capital of 1,000,000, in 254 shares, and that at first large sums were divided among the shareholders on account of profits, or alleged profits. Some time after, however, the concern became suddenly embarrassed by pressing liabilities, and the directors represented that the only mode of avoiding immediate bankruptcy was by a loan of 26,000, from the London and Westminster Bank to meet the demands of public creditors, and that as many of the shareholders as could be procured should sign their names to promissory notes to the amount, as a collateral security with the directors, by which means time was to be given to collect the assets and to make such calls on the shareholders as might be necessary, one of 50, being thought to be sufficient, provided the affairs were well managed. Several of the shareholders joined in these promissory notes, and one of the petitioners (George Troutbeck) placed his name to three promissory notes of 5000 each. A call of 50 per share to defray the liabilities, which are still outstanding, was made, as the holders of the notes expected payment; but it was only partially responded to. The London and Westminster Bank required the notes to be taken up as they arrived at maturity, and they were so by E. Walker, one of the directors, who applied to the shareholders for a rateable contribution to the expenses, in respect of which petitioner Troutbeck states he paid 3216; no portion of it having yet been reimbursed him. He also sets forth that he transferred 10 shares to Donald Maclean, then a director and M.P. for Oxford, the transfer of which was not duly completed; and in regard to them he was informed by the solicitors that he was liable for them to the last shilling of his fortune. Customers drew out their balances, and a bill was filed against the directors to fix them with certain losses, but no decree has been pronounced. Master Kinsler having settled the list of contributors, a call has to be made to defray the liabilities.

**ANOTHER EXTRAORDINARY CURE OF A WOUND IN THE LEG BY HOLLOWAY'S OINTMENT AND PILLS.**—Andrew Milton, an ostler, residing at Burton, about two years ago, bruised his shin, and being of a full habit of body, a severe inflammation ensued, which defied every effort to subside; afterwards an obstinate wound formed, and notwithstanding various remedies, would not heal, and his leg became so bad that his surgeon urged him to have it amputated, but not wishing to lose his limb he gave Holloway's medicine a trial, he commenced, and he has reason to be grateful that he did, for, by their use, he has effected a sound and perfect cure.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

## PATENT IMPROVEMENTS IN CHRONOMETERS,

**WATCHES AND CLOCKS.**  
E. J. DENT, 93, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area).  
Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from 25 to 210 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each.

**DENT'S PATENT DIPLIOSCOPE.**  
or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

## INDURATED AND IMPERVIOUS STONE, CHALK, &c.

—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTHCHISON'S MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.

Apply to HUTHCHISON & CO.,  
Tunbridge Wells, Kent, and Caen, Normandy, stating name, address, and capital at command.

N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c.

**LICENCES GRANTED.**

## THE PATENT OFFICE AND DESIGNS REGISTRY,

No. 210, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION OF INVENTIONS AND DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

## ON NERVOUS AND GENERATIVE DISEASES.

New Edition, illustrated with 45 coloured Engravings, and containing the

Just published, the 54th thousand, price 2s. 6d., in a sealed envelope, or sent by the author, post-paid, for 40 postage stamps.

**MANHOOD: THE CAUSES OF ITS PREMATURE DECLINE.**  
with plain directions for its perfect restoration. A Medical Review of every form, cause, and cure of nervous debility, impotency, loss of mental and physical capacity, whether resulting from youthful abuse, the follies of maturity, the effects of climate, or infection, &c., addressed to the sufferer in youth, manhood, and old age; with the author's observations on marriage, its duties, and disqualifications; the prevention and cure of syphilis, spermatorrhoea, and other urino-genital diseases, as adopted by Deslandes, Lallemand, Ricord, surgeons to the Hospital Venereux, Paris.

By J. L. CURTIS, Surgeon, 15, Albermarle-street, Piccadilly, London.

With this new and enlarged edition of MANHOOD, which is now translated into five languages, will be given the author's prescription of a disinfecting lotion for the prevention of all secret disorders, which, by its extraordinary powers in decomposing the virus, as attested by the opinions of Lallemand, and the most eminent surgeons in Europe, will go far to prevent the ravages which for ages these diseases have entailed upon mankind.

As home for consultation daily, from 11 till Three, and Six to Eight o'clock.

"We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman."—*Sun*, Evening Paper.

Published by the author; sold also in sealed envelopes, by Strange, 21, Paternoster-row; Hannay, 63, Oxford-street; Mann, 39, Cornhill; London; Haywood, Oldham-street; and Armstrong, 23, Bond-street; Manchester; Howell, 6, Church-street; Liverpool; Campbell, Chelsea, 135, Argyle-street; Glasgow; Robinson, 11, Green-street; Edinburgh; Berry and Co., Capel-street, Dublin; and by all booksellers and chemists in the United Kingdom.

THIRTY-FIRST EDITION.

Illustrated by 26 Anatomical Coloured Engravings on Steel. On Physical Disqualifications, Generative Incapacity, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND:** a medical work, on the infirmities

and decay of the generative system, from excessive indulgence, infection, and the inordinate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 26 coloured engravings. By R. & L. PERRY & CO., consulting surgeons, 19, Berners-street, Oxford-street, London. Published by the authors; sold by Strange, 21, Paternoster-row; Hannay, 63, Oxford-street; Mann, 39, Cornhill; London; Haywood, Oldham-street; and Armstrong, 23, Bond-street; Manchester; Howell, 6, Church-street; Liverpool; Campbell, Chelsea, 135, Argyle-street; Glasgow; Robinson, 11, Green-street; Edinburgh; Berry and Co., Capel-street, Dublin; and by all booksellers and chemists in the United Kingdom.

THE CORDIAL BALM OF SYRIACUM is exclusively employed in treating nervous and sexual debility, impotency, &c., 11s. and 33s. per bottle.—THE CONCENTRATED DETESTIVE ESSENCE, an anti-syphilitic remedy, for purifying the blood in cases of infection, secondary symptoms, eruptions, and the abuse of mercury, 11s. and 33s. per bottle.—PERRY'S PURIFYING SPECIFIC PILLS, 2s. 9d., 4s. 6d., and 11s. per box—a certain remedy for gonorrhoea, gleet, strictures, and chronic inflammation of the bladder.—Consultation fee, if by letter, 2s. A full description of the case is necessary, stating age, habits, and position in society. 45 packets, with advice, to be had at the establishment only, by which the fee, 2s., is saved.—Messrs. Perry, surgeons, are in attendance daily at 19, Berners-street, from 11 to 2, and 5 to 8; on Sundays, from 11 to 1.

Sold by Sutton and Co., 10, Bow Churchyard; W. Edwards, 57, St. Paul's Churchyard; Barley and Sons, Farringdon-street; Butler, 4, Cheapside; R. Johnston, 63, Cornhill; L. Hill, New Cross; W. B. Jones, chemist, Kingston; J. W. Tanner, Egham; S. Smith, Windsor; J. B. Shuttlecock, Brixley; T. Riches, London-street, Greenwich; T. Parkes, Woolwich; E. Cole, Dorking; and John Tharby, High street, Romford—of whom may be had the *Silent Friend*.

**DR. LA'MERT ON THE SECRET INFIRMITIES OF YOUTH AND MATURITY.**

With 40 coloured engravings on steel.

Just published, and may be had in French or English, in a sealed envelope, 2s. 6d.; or post-free, from the author, for forty-two stamps.

**SELF-PRESERVATION: A Medical Treatise, on the Physiology**

of Marriage, and on the Secret Infirmities and Disorders of Youth and Maturity, usually acquired at an early period of life, which debilitate the physical and mental powers, diminish and enfeeble the natural feelings, and exhaust the vital energies of Manhood; with Practical Observations on the Treatment of Nervous Debility, whether arising from these causes, close study, or the influence of tropical climates; local and constitutional weakness, syphilis, stricture, and all diseases and derangements resulting from indiscretion; with 40 coloured engravings, illustrating the Anatomy, Physiology, and Diseases of the Reproductive Organ, explaining their various structures, uses, and functions, and the injuries that are produced in them by solitary habits, excesses, and infection.

BY SAMUEL LA'MERT, M.D., 37, EXCHEQUER-SQUARE, LONDON.

Doctor of Medicine, Matriculated Member of the University of Edinburgh, Licentiate of Apothecaries' Hall, London, Hon. Member of the London Hospital Medical Society, &c. Sold by Kent and Richards, 92, Paternoster-row; Hannay, 63, Oxford-street; Strie, Titchborne-street, Haymarket; Mann, No. 39, Cornhill; Gordon, 146, Leadenhall-street; or free by post, for 45 stamps, from the author's residence, who may be consulted personally (or by letter) on these disorders daily, from 10 till 5, and from 5 till 9.

**THE GOLD MINES IN BRAZIL.**—The mines were at one period very productive, the largest fifth on the gold was in 1733—viz.: 169,000 oits; in 1807 it was only 11,893 oits. Near the arrival of Agoaquante (warm water), situated near a large and deep lake of brackish, tepid, and foetid water, two miles from the confluence of the Rio das Amazonas with the Maranhão, the gold was so abundant as to draw an assemblage of 12,000 persons to the neighbourhood. Among other pieces of considerable size, one was found of 43 lbs. weight, which was transmitted to the Court in the same form that nature presented it. This rarity was placed in the Royal Museum at Lisbon, and became the booty of the French army when in that city. It is believed at Minas Geraes that the main treasures of the earth are still untouched, and that only what was scattered upon the surface had been gathered. About the end of the last century a discovery was made at a place which, because of the colour of the metal, was called *ouro podre* (rotten gold) the vein was rich, and the people were so eager to profit by it, that when the Guardamor endeavoured to interpose his authority, and regulate the extraction according to the laws, he was set at defiance. A party of contraband miners collected 3 arrobas in the course of one night. The people had long solicited that the country about the Rio Claro and Rio dos Pileos, which had been reserved because of its diamonds, should be laid open, for this forbidden district, 40 leagues extent, was supposed to abound with gold, which petition was granted in 1801. At Brazil the most profound ignorance and extreme filthiness of the habits of the people creates a revolting picture. The ceremonies of the Roman Catholic religion, in the meanwhile, are duly celebrated, superstition blending with the grossest voluptuaries. The monks, an ignorant and debauched crew, at once slugs and libertines, swarm in every street. Such then is Brazil, that land of wonders, whose rivers roll over beds of gold, where the rocks glow with topazes, and the sands sparkle with diamonds, where Nature assumes her richest dress beneath the blaze of a tropical sun and birds of the gaudiest plumage vie with the splendid effluence of the forests they inhabit.

**GOLD IN THE UNITED STATES.**—We learn from the *New York Tribune*, that at the American Association for the Advancement of Science some interesting details were given as to the gold formation of North Carolina, Virginia, and Maryland. The belt or district of country in which occur the gold-bearing rocks of the Atlantic border of the United States appears to range longitudinally from north-east to north-west, in a general direction, not far from N. 32° E. This direction is the result of a grand number of observations, taken in all the three States, and at points where the formation appears to be the most regular and determinate. It also results from a general observation of the relative position of the extreme points at which the central axis of the gold district has been noticed. Taking Brookville, in Maryland, and tracing by Rockville to the point of crossing of the Potomac, below the Great Falls—extending thence across the Rappahannock 10 miles above Fredericksburg; thence through Stafford, Fauquier, Calverton, Spotsylvania, Orange, Louisa, Fluvanna, Buckingham, Campbell and Pittsylvania, in the State of Virginia; through Buckingham, Davidson, Rowan, Cabarrus and Mecklenburg counties, in North Carolina. By prolonging the same axis north-westerly, it passes through a part of York county, in Pennsylvania, in which gold is said to have been detected; and several hundred miles further to the north-east it strikes the tour of Somerset in Vermont, in which, according to Professor Hitchcock, gold was also discovered, more than 30 years ago. As the result of special observations on the strike of the slate beds, in which the gold veins occurred, injected between the piles of sedimentary rocks, the facts observed were found between Rockville and Brookville, in Maryland, where the bearing is N. 30° E.—on the borders of Spotsylvania and Orange Counties, in Virginia, N. 29° to 32° E.—in Montgomery County, North Carolina, at the Russell Mine, N. 82° E.—and in Mecklenburg county, at the Smart Mine, 20 miles south-eastward of Charlotte, the strike of the beds being there N. 32° E. These are a few of the points noticed, and the results are obtained from numerous observations taken at each point. The system of metamorphic rocks, in which the gold-bearing veins occur, appears to have undergone different degrees of change in the different parts of the tract. While in some parts the original slaty structure is preserved, in others the lamination has been partly obliterated, and the texture changed by the evident effect of heat. In some points to which observation has extended there is evidently an intermingling of rocks of the gneissoid character with such as still retain the slaty structure. In certain parts of the North Carolina gold region the granite rocks prevail, and there the auriferous veins have various directions, apparently wholly irrespective of the general trend of the gold formation. Thus between the town of Charlotte and the Catawba river, and within a circuit about three or four miles in diameter, are found veins which have been more or less extensively worked, with directions running to the N. 64° E.; N. 47° E.; N. 84° W.; and N. 264° E.; and N. 84° W.—so that if these directions were prolonged they would intersect each other at right angles. In regard to the materials or vein stones, in which the auriferous particles are found, they differ very widely; in some cases the material is an argillaceous slate, of a silky lustre, much interspersed with minute cubes of pyrites of iron or of copper, or of both, as at the Russell Mine on the Newberry, in Montgomery County in North Carolina; in other cases it is partly in quartz and partly in the slaty walls of the veins; and in others still it is wholly in the quartz, being scarcely at all impregnated with the precious metal. The materials which exist in the veins are either such as have been acted on by meteoric influences and partly decomposed, or lying beyond the reach of such influences, have escaped decomposition, and may be regarded as the true exponents of the deeper veinstone. These latter are in general less rich in gold than in the former, chiefly on account of having lost a part of their solid material by decomposition. But the deep ore owes their inferior value in no small degree also to the difficulty of extracting the gold from its combination with the sulphurets, which near the surface have been reduced by the combined action of air, water, and other materials from the atmosphere.

**CALIFORNIA.**—The latest accounts from the gold region are to the 20th July. Trade at San Francisco was brisker, and the markets stiffer. Money was in demand, owing to the activity displayed in rebuilding the city. Gold dust was selling at \$164 per oz. Previous accounts of the discovery of a richer tract of gold quartz than any yet made known are confirmed. The Gold Lake, as it is called, is situated at the head of the Feather river and Nelson's Creek, and 100 miles from Marysville. These diggings are stated to be at such an altitude above the level of the plains, that the atmosphere is pure and invigorating. Gold is found in great abundance over a large tract of quartz region. The richest deposits are believed to be at a distance of 10 ft. below the surface. Washing is performed from the yield of the earth from 5 to 8 ft. beneath; the gold is coarse and beautiful. A great winter trade is expected to be done with Marysville and the neighbourhood this year.

Among the items of intelligence which have been recently received, is one to the effect that Col. Fremont's agent in California had a good deal of trouble in levying contributions upon those who are mining in the immense region claimed as his property; that thousands of persons were located upon the claim, and they perforce looted a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on it refused to pay their rent. It is rich in the precious metals, and Colonel Fremont's agent to certain parties the privilege of mining at a moderate rental. This was done for the purpose of maintaining possession against intruders; for, as our readers are aware, the possession of the land is the possession of the land or owner. The manner in which the misconception arose is this—when the agent of the State of California demanded the fee imposed upon aliens for the privilege of mining, the locators, being Mexicans chiefly, refused to pay, on the ground that they contracted with Colonel Fremont, and that if any one was responsible for their tax it was he. This is the explanation of the story about Colonel Fremont's agent being hooted at, when he solicited rent for those working on that property. By the way, we lately heard a gentleman collector who he talked of rent. We have very good authority for stating that this intelligence is without any foundation; that, in fact, it is wholly wrong, and that the circumstance mentioned arose from a misconception of the facts of the case. Colonel Fremont undoubtedly possesses a very large tract of land in California, at Las Mariposas, which was granted to him some time since, but there is no truth in the statement, that the persons engaged in mining on



## ON SOME OF THE USES OF PYROGEN IN NATURE.—No. II.

BY JOHN JOSEPH LAKE.

By continuing the application of electro-magnetic phenomena to those of astronomy, we may arrive at the cause of planetary bodies being retained within the zodiac—a space marked off in the heavens, on account of their revolutions being confined within it.

The currents of pyrogen flowing about the sun and planets correspond in principle to the currents flowing about the limbs of a horse-shoe electro-magnet, and form what may be called two electro-magnetic hemispheres; or these two electro-magnetic hemispheres may be viewed as two electro-magnets, placed together, with their currents flowing in opposite directions—viz.: in the earth, and other planets, in the northern hemisphere under from south to north, and over from north to south; and in the southern hemisphere under from north to south, and over from south to north—(vide Dr. Faraday in *Phil. Trans.*, 1832, "On Terrestrial Magneto-Electric Induction," vol. 122, p. 163, par. 160, et seq.)—and in the sun and satellites in the opposite directions. This being the case, the planets moving in the ecliptic are placed, as it were, between the two limbs of a horse-shoe electro-magnet, and are subject to the like laws.

In the phenomenon of revolution we see a body forced, as far as natural circumstances will admit, from between the two limbs of an electro-magnet; and we also see the same effect produced by the electro-magnetism of the sun, which forces the planets from between its two electro-magnetic hemispheres; but as the laws of gravitation check this effect, and control it by drawing those bodies towards the sun, no resource is left to them but to perform a circuit about it, for they cannot advance in a straight line, or tangent, to their orbits, because of the attraction of gravitation. Neither can they pass direct to, and come in collision with, the sun, because of the electro-magnetic repulsion above described. They, therefore, endeavour to follow the diagonal of the lines of direction of these two forces, according to a well-known law of matter; but as the directions of these two forces alter at every point of progress of the planets, they must follow a circular direction, in obedience to this change.

The planets could not remain at the pole of the sun; for if the earth, for instance, were placed at the pole of the sun instead of in the zodiac, a little consideration will make it apparent that, of all the streams or rays of pyrogen that flow from the pole of that luminary, like the rays of a star from the centre, two only would exactly agree in direction with two on the earth, and that only for a moment; all the rest, in each body, would be in a greater or less degree of opposition. But when the earth is on the plane of the sun's equator, this influence approaches to a nearer equality; for, though the upper currents of both the sun and earth are in opposition, yet the upper currents of the sun agree with the under currents of the earth, and the upper currents of the earth with those in the body of the sun.

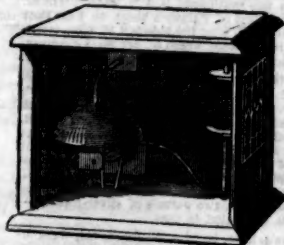
Hence, on the plane of the solar equator, the electro-magnetic action is in the state of greatest neutrality, and hence the planets move in or near it. The same law applies to the corresponding motion of a satellite round a planet.

Further, when a substance of greater length than width is placed between the two limbs of an electro-magnet in a cross direction, and the current is set on, the substance will change its position, and come to rest with its greatest length parallel with the limbs of the electro-magnet. By the operation of this law in the solar system bodies like the rings of Saturn will be retained in their place on or near the equator of planets having them, it being alike the point of greatest neutrality, and of that in which alone a regular arrangement of electric currents can be maintained in a body shaped like a ring.

The direction of the heliocentric motion of the planets—that is, of that in which they move round the sun—is the same as the diurnal, as far as the latter has been ascertained, which is what might be expected by the operation of the above forces; for the same electro-magnetic power that urges the planets in that direction catches the elevated portions of their surfaces, and causes them to rotate on their axis in the same direction. The experiment of Ampere, in which he made a copper disc, surrounded by a copper helix, and suspended by a silk thread, to revolve, so as to meet a strong magnet held near it, shows that pyrogen can take other matter, as it were, in its grasp, and force it in a particular direction when delicately suspended, and nothing in art can equal the heavenly bodies for delicacy of suspension.—*Ordnance-office, Portsmouth, August 26.*

## THE ELECTRIC INDICATOR.

An exceedingly ingenious instrument is being manufactured by Messrs. Horne, Thornthwaite, and Wood (the sole licensees), called the "electric indicator," which is intended to give notice of the presence of danger by fire or thieves, and it appears to answer the purpose perfectly. It is not a crude invention, having stood the test of hard practice during a period of three years, and already mentioned in the *Journal*. Its theory and construction will be easily understood by the following explanation:—"As shown in the diagram, the case contains the bell and wheels, and sustains the weights of an alarm. The catch which takes into the striking-wheel is connected with a lever fixed underneath a vertical helix, hollow in the direction of its axis, and containing an armature moving freely within it. The latter is sustained in its proper place by a permanent magnet. Whenever a current of electricity passes through the helix, the armature is converted into an electro-magnet, and being then instantly repelled by the permanent magnet, it falls upon the end of the lever, liberates the catch, sets the weights in motion, and rings the bell.



To place the various parts of a house in immediate communication with the apparatus just described, two covered wires are laid, say along the angles of the passages and rooms, to each of the outside doors and windows, and which are fitted up with a very simple contrivance, termed circuit-plates, and to these plates the ends of the wires are attached. These arrangements being completed, and which are intended to give notice of any attempt at burglary, let us suppose that the doors and windows are shut, and the indicator set for the night. So long as the guarded parts of the house are safe, everything remains quiet; but if either of the doors or windows be ever so stealthily opened, the electric circuit is completed, quicker than thought the armature falls, and an alarm is given by the ringing of the alarm bell. An additional wire, laid alongside of those just mentioned and connected with thermometers (of a peculiar construction, but very cheap) fixed in the passages, rooms, and other parts of the house, constitute the means of giving warning of the first commencement of a fire. The battery and alarm apparatus are used for both purposes at the same time, and with the additional advantage that the fire alarm is in operation by day as well as night, without interfering with the wires of the thief department, which, for convenience, are thrown out of action during the day. The thermometers of which I have spoken are so adjusted that any sudden rise in the temperature amounting to a difference of 8° or 10° (greater or less, as may be desired) beyond the ordinary range of the surrounding atmosphere, causes an immediate alarm to be given. Nor is this all. On the top of the box a magnetised needle is fixed. This instrument forms part of the circuit between the battery and helix, for the purpose of indicating the cause of alarm, the needle pointing to the word *thief* or *fire*, as the case may be. The instruments are beautifully constructed, and a sight of them will well repay a visit to the manufacturers.

**NEW WHITE ZINC PAINT.**—We had occasion, some few weeks since, to notice the discovery of a means of making a first-class white paint from zinc, free from the very many objections of most other pigments of a white colour. It certainly does appear a grievous fact that a paint should have been so long in use as that made from white lead, which is known to all to possess such extensive powers of ill. Firstly, the preparer is poisoned; secondly, the artisan is paralyzed; and, thirdly, the public health is injured by its use. If it can strike down the strong, and slay the natural career of the otherwise healthy, what amount of harm may not be placed to its charge when we find it spread over vast surfaces, and impregnating the air of the most crowded thoroughfares? We have hitherto gone to our door and invited death, in the name of cleanliness, to take up his abode at our very hearths; it is to be hoped we shall be wiser for the future, as there is no longer any excuse for so fatal an error. The French Government have acted upon this suggestion for some months past; and everywhere within the influence of official reach, the noxious white lead has been banished; and the zinc similarly prepared, under Messrs. Hubbert and Son's patent, is being used in its stead.

## PATENT LAW AND PATENT RIGHT.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Inventors are much indebted to the *Mining Journal* for the very liberal aid it has given for discussing what are their rights, and urging the Legislature to protect them from being robbed of such rights. Among the various correspondents who have taken part in the discussion, Mr. David Mushet has most unmasked the iniquity of the present system; he has, with his usual clear and cogent reasoning, well illustrated what really is meant when the public are said to be injured by the present expensive and precarious title which the patent laws profess to confer upon inventors, by which to claim some reward from the production of their own labours. So far from the public being injured by an equitable law upon the subject, they would be very great gainers; for as Mr. Mushet has well shown, the interest of inventors and that of the public are identical; such a law would injure no party, except those who, designing themselves the public, say they are injured by the exclusiveness of patent right, and who, a mere fraction of the community, for self-appropriation, and not the public good, covet the profit and the merit of inventions, as soon as they perceive the public disposed by its demand to give the one, and by its appreciation to award the other. Yet, if there be such a thief as property right at all, they have no more claim to either than they have to the farm or estate, or to invest themselves with the merit of those great public services by which the late and much lamented proprietor has so distinguished himself in the estimation of mankind.

What, then, are the rights of inventors? For the present, I shall omit entering into the consideration of those contingent circumstances, which render it necessary that when individual right is obstructive to some great and national good, an equitable compensation should be, and is, granted in exchange for such property. This question suggests another—namely, what is property right? Is it, as the socialists and communists imply, held by no higher right than the power to stain it? Or, does the right consist, as others seem to imply, upon mere Act of Parliament? Because, if it does, it is easy to show that this latter right is resolvable into the former—viz., power to assert and enforce whatever it deems shall be the right to property; so that, if this view of the case be the correct one, the socialist and communist's doctrine is not so far wrong after all. But it is beyond all cavil that the only sacred and inalienable personal right to property is antecedent to either the law of power or the written law. It is the duty of both these to enforce that sacred right which the peasant in common with the prince possesses in the power except those who, designing themselves the public, say they are injured by the exclusiveness of patent right, and who, a mere fraction of the community, for self-appropriation, and not the public good, covet the profit and the merit of inventions, as soon as they perceive the public disposed by its demand to give the one, and by its appreciation to award the other. Yet, if there be such a thief as property right at all, they have no more claim to either than they have to the farm or estate, or to invest themselves with the merit of those great public services by which the late and much lamented proprietor has so distinguished himself in the estimation of mankind.

Let us now see how the acknowledged right to personal property corresponds with the view I have given above. The agriculturist applies his capital and industry to increase the productions of the earth; such increase the law has constituted his personal reward. The manufacturer converts the raw material by his labour into a finished article; he has a personal right to the fruits of his industry, and the law protects him in the enjoyment of them. The merchant transports goods from where they are in excess to where they are required; he, too, gets his reward. The retail tradesman distributes these goods in small quantities, for which he has his reward. The labourer, too, gives an enhanced value to that which he is employed upon; the law acknowledges his right also to personal property, in the labour of his hands and head. The author writes down his thoughts and prints them for others to read; the law has conferred upon this class a simple, cheap, and effectual title to the fruits of his industry, which he is to enjoy to the end of his days, and which he is to transmit to his heirs and assigns.

Now, if we consider the rights of inventors, we shall find that they are in many cases it would have been much better for him had his mere shadow of legal title not been held out to entrap him, as, under an impression that in it he had security that to some extent, at least, he would be able to enjoy the fruits of his labour, he is induced to spend his capital, his strength, and his energies, until recompense is in prospect; when, by some of those numerous legal quibbles, the shadow, like that of the passing cloud, flies away, and leaves the inventor with no other property than the huge sea of water which parchments to him the title of a patent. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument.

Now, wherein does this case differ from that brought about by the inventor, except that it is not in some of the cases which were previously described, but in all of them. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument.

Having thus disposed of the matter of right, let us now very briefly glance at those considerations which constitute the ground of that difference of intrinsic value which, in a public view, the result of the labours of different men possess. And here, if the intrinsic value is to be measured by the good which the labours of individuals have conferred upon mankind, the result of the labours of the inventor is the greatest. The inventor, who has been previously deceived, is then left to the mercy of the law, which, in the hands of the legal quibblers, is a most cruel and oppressive instrument.

In this country, where precedent seems so essential to the awarding even justice long withheld, I venture again to call attention to the law of copyright, as one most suitable to protect inventors. If the term granted to the author be longer than the Legislature consider the inventor entitled to, let it reduce such term to its own measure of justice; but by all means abolish the enormous tax for a title to do good, and take inventors out of the unmerciful laws of the law, which at any time, by the lever of wealth, can be made to crush the inventor, and to this end let the Legislature enact that no person shall be entitled to a patent right until he has first given to the public a full and complete disclosure of his invention, and that no person shall be entitled to a patent right until he has first given to the public a full and complete disclosure of his invention.

Let the public clearly understand, that by countenancing injury towards inventors it is committing suicide against itself and its posterity. Let the enlightened legislator contemplate the good of his country, over whose destiny he presides. Let him mark well how much his country has been benefited by the labours of inventors. Let him read their history, and learn there how the spirit of craft, the gloomy atmosphere of prejudice, and the chilling effects of public apathy, sent many with broken hearts to a premature grave. Let him read of others who, from better fortune or stronger mind and constitution, lived to see their labours appreciated and acknowledged, but who had to combat discouragements such as ordinary life knows nothing of, and such as every Englishman should (knowing what his country has inherited from their labours) blush for very shame that to this day is continued the same system, which is continually bringing forth the same fruits of injury.

Let the Legislature recollect that successful invention in all its higher branches demands a range of knowledge and research second to none; that it is, too, dependent

upon that rare conjunction of powers which is represented by the imagination of the poet, conjoined with power to retain a multitude of simple ideas in the mind, there arrange and re-arrange them, until it has got them into such order that the intellect can discern that natural relation which the scientific mind knows must subsist before the mental proposition is worth even attempting to reduce to practice. T. CHADDOCK.

Handley Works, Thames-bank, Pimlico, August 19.

## ON GALVANIC SOLDERING.

Under the name of galvanic soldering, a process is known by means of which two pieces of metal may be united, by means of another metal, which is precipitated thereon through the agency of a galvanic current. This mode of soldering by the "wet method" has been often recommended in various periodicals relating to the industrial arts; but it has been objected that—practically speaking—the union between two pieces of metal could not be effected by means of a metal precipitated by galvanic agency. In order, however, to arrive at a definite conclusion upon this question, M. Elsner undertook the following experiments, the results of which are in favour of the practical use of the operation of soldering by galvanic agency. In conducting these experiments, the kind of battery known as Daniell's "constant battery" was employed; and upon the end of the copper wire, which formed the negative electrode, a strong ring of sheet-copper was placed. This ring was cut asunder at one point, and the distance left between the severed parts was about one-half or one-third of a millimetre. At the end of a few days (during which time the exciting liquors were several times renewed) the space in the severed portion of the ring was completely filled up with copper regulus, which had been precipitated; and on partially cutting with a file through the part thus filled up, and examining it with a lens, it was observed to be very equally filled with solid and coherent copper.

Another copper ring was then cut into two parts, and the two semi-annular segments, thus obtained, were placed with the faces of the sections opposite each other, and submitted to the action of a galvanic current. At the end of a few days the segments were united by the copper precipitated, thus forming again a complete ring. It was also found in this case, on removing with a file a portion of the thickness of the ring at the points of contact, that the spaces had been completely filled up by copper galvanically precipitated, which had united the whole. On observing these points carefully with a lens, the regular deposition of the copper could be readily traced between the formerly separated portions of the ring.

A third experiment was made in the following manner:—Two strong rings of sheet-copper were laid with their freshly-cut faces one upon another, so that the two rings constituted a cylinder. These rings were surrounded by a band of sheet-tin, which was coated with a solution of wax, so that the two rings were equally surrounded by a conducting material. Thus disposed, these rings were attached to the negative wire of the battery, and immersed in the bath of sulphate of copper. At the end of a few days the interior surface of the rings was covered with precipitated copper, and between the contact surfaces of the two rings copper was also precipitated. These rings had only been submitted to the galvanic current to such an extent as to cover their interior surface with a thin coating of precipitated copper, and yet they were already completely re-united, and formed a cylinder consisting of a single piece. The exterior conducting covering consisting of a sheet of tin, was, of course, removed, before testing the cohesion or persistence of the galvanic precipitate. It may be remarked, that these rings, after being for a certain time in contact (during the galvanic action), together with the plate of copper upon which they rested, became so incrustated with precipitated metallic copper, that some force was found necessary to effect their detachment from the copper wire.

There would appear to be no doubt, then, according to the results obtained in the preceding experiments, that two pieces of metal may be firmly united by means of galvanically-precipitated copper;—in a word, that soldering by galvanic agency is perfectly practicable. It will, therefore, be possible to firmly unite the different parts of a large piece of metal, and to make a perfect figure of them by galvanic precipitation of a metal (copper in ordinary cases). If solutions of salts of gold or silver were employed in as concentrated a form as those of copper above mentioned, there is reason to believe that galvanic soldering would also result. In fact, M. de Hackewitz states, that in some experiments on a larger scale, which he undertook, to obtain hollow figures by galvanoplastic means, he had remarked that galvanic union often took place between the pieces operated upon. M. Elsner states, that while conducting the experiments above mentioned, he remarked that, by employing too powerful a current, the negative electrodes of copper, and even the plate of copper, and ring of the same metal resting thereon, became covered with a deep brown substance, in the same manner as this occurs under similar circumstances in galvanic gilding, as is well known. After several unsuccessful attempts to prevent the formation of this brown coating, M. Elsner found that it was possible to remove it entirely on immersing the articles covered therewith, during a few seconds, in a mixture of sulphuric and nitric acids. By this means the precipitated copper was made to assume its natural red colour. The possibility of practically effecting the operation of soldering by galvanic agency may be explained in a few words, in a theoretical point of view. The article is, in fact, in an electro-negative state of excitation, whilst the zinc operates positively; the result is, that the faces which are placed opposite each other, when the ring has been cut, are negative—that is to say, in an electric condition of the same denomination. During the progress of the electrolytic decomposition of the metallic salt in solution (sulphate of copper in the above case), the electro-positive molecules of copper which are detached, simultaneously arrange themselves upon the two opposite faces, and in the direction of the break. Now, from the moment that these molecules are deposited, they constitute, with the piece, a homogeneous mass; and from that time act negatively upon the copper which is contained in the solution, and again precipitate copper in the form of regulus. This method of operation continues until the space which existed between the two separate pieces of metal is filled up with metallic copper; in fact, the layers of copper which become deposited in an equal manner upon the contiguous faces of the metal, gradually diminish the distance which separated the latter, until at length the metallic layers which cross in the opposite direction meet each other; the result being that the whole of the break which originally existed between the faces will have disappeared, and become filled up with copper.

With respect to the solidity (the degree of cohesion) of the galvanic soldering, it is the same as that of copper or other metal precipitated by galvanic agency. It will, moreover, be well understood, that too energetic galvanic excitation must have an injurious influence upon the cohesion of the metal precipitated; and in this case precisely the same phenomena will be observed as those which have long manifested themselves in ordinary galvanoplastic operations.—L. ELSNER: *Technologist*.

## RAILROADS AND CANALS IN THE UNITED STATES.

From an interesting paper, published in the *Morning Chronicle* of Thursday, we extract the following tables, which show that industrial pursuits and all the inventions of modern progress succeed faster in the free than in the slave states:

	FREE STATES.	Slave States.
Massachusetts contains	Miles 435 1/2	100 1/2
Maine	104	20 1/2
New Hampshire	90 1/2	10
Rhode Island	47	—
Connecticut	129 1/2	61 1/2
New York	632 1/2	95 1/2
New Jersey	212 1/2	147 1/2
Pennsylvania	1067 1/2	1024 1/2
Ohio	126	764
Michigan	195	—
Indiana	95	317
Illinois	54	106
Total	3254 1/2	3374 1/2
	SLAVE STATES.	
Delaware	19	13 1/2
Maryland	263	136
Virginia	361 1/2	216 1/2
North Carolina	246	19
South Carolina	201 1/2	45 1/2
Georgia	676	28
Florida	131	51 1/2
Alabama	97 1/2	—
Mississippi	351	99 1/2
Louisiana	1044	—
Tennessee	25	—
Kentucky	—	—
Total	2292 1/2	604 1/2
Making for the free states a water and railroad intercommunication of	Miles 6631 1/2	
For the slave states	2305	
Aggregate in favour of free states	373 1/2	



## MINING IN MEXICO.

A correspondent of the *Daily News* has furnished some highly interesting details relative to the silver and quicksilver mines in the district of El Doctor, in Mexico, one of those which formerly returned large quantities of silver, but which has since the period of the revolution in 1810 been but partially worked. The district of El Doctor, situated about 60 leagues to the north-north-west of the city of Mexico, consists of an elevated group of hills, with intervening barrancas, of a character altogether the most rugged and uneven that can possibly be imagined. It is bounded on the north and east by the River Montezuma; on the west by another river of considerable size, which flows from the south, and joins the Montezuma on the north-east extremity of the district; and on the south by a range of calcareous mountains, greatly elevated above those of the district in general—the depth of the descent of the rivers, and the height of the mountains forming the boundaries being such as to render the Doctor, from whatever point it be approached, very difficult of access, and in a measure isolated from the adjacent country. The depth of the descent from the town of El Doctor to the River Montezuma, in the road to Zimapan, is about 5000 ft., and while the distance between these towns in a straight line is only from four to five leagues, such is the singular and uneven nature of the ground, that it is two days' journey on horseback—although an Indian, taking short cuts across the mountains, and availing himself of paths inaccessible to a horse, will walk from one of these towns to the other in half a day. The elevated range of mountains forming the southern boundary of the district, and which is from 1000 to 2000 feet above the average level of the countless hills of the Doctor, is composed of mountain limestone. The lower hills, and in fact all the remainder of the district, consist of a mixture of clay, slate, limestone, and conglomerate, exhibiting strata of all degrees of elevation, and in some places showing curious contortions.

Very near the town of El Doctor is the once celebrated silver mine, called Mina Grande, which flourished, and is understood to have given great produce, about the middle of the last century. Meeting, however, with much water in the bottoms, it was determined to drive an adit to come in below the bottoms, in order to effect a complete drainage. This work was commenced in 1780, and finished in 1794—a length of 900 varas, at an expense of \$90,000; but so badly was it arranged and executed that, notwithstanding the adjacent barranca admitted its being driven at a suitable depth, and although, in fact, the mouth of the adit is not badly placed with regard to height, it was allowed in the course of driving to ascend so much above its proper level that it reached the vein far above the bottoms of the mine, and was, therefore, of little or no use. Some attempts have subsequently been made to effect a drainage by winzes, but with only partial success, the principal bottom workings remaining covered by water to the present time. This was a bitter disappointment, not only to the parties immediately interested, but to the whole neighbourhood. The natives still insist that, had the adit been well and properly directed, the mine would have been a flourishing and profitable one to the present day. A few miners still gain a livelihood by working the backs. The produce is chiefly muriate or horn silver, with native silver, which is reduced by smelting. All the produce was brought from the mine on men's backs. The vein runs in direction W.N.W. and E.S.E., and only dips 12° from a horizontal line. The upper wall of the vein is mountain limestone, and the under wall clay-slate, the vein itself being at the point of junction, and forming the division between the two rocks. Besides the Mina Grande, no discovery of silver of any importance has been made in the district. Veins, however, are to be found in every direction, but they are generally of a small size. At the present time many are being worked on a small scale, by common labourers. The Anglo-Mexican Company, in the year 1826, formed an establishment at San Antonio, and worked some mines in that neighbourhood, but without success. The Catore Company also, about the same period, contracted for, and expended some money upon, the Mina Grande, but they did not effectual work, and abandoned the concern with loss. The same company took also the San Onofre Mine, and sunk a shaft a few varas, but this work was so disposed as to leave the vein going downwards, instead of being sunk upon it. An attempt has also recently been made to re-open the Mina Grande by a Mexican company, but which also failed. At a spot named Laguna, the Real del Monte Company, in the year 1839, erected some works for the reduction of quicksilver ores from the mine of San Onofre, which mine is from 8000 to 4000 feet below the Laguna, and, therefore, nearly approximates the point considered as the *tierra caliente*, while at the town of El Doctor and Laguna much inconvenience is experienced from the cold and damp fogs and occasional frost which occur at this great elevation. The vein of San Onofre, at the point where opened, was about four varas wide, with a direction 40° east of south, and an inclination of 45°. The vein-stone, or matrix, of the ore is chiefly carbonate of lime, and the adjacent rocks, clay, slate, and limestone.

Workings were commenced on the eastern side of a deep ravine, named the Barranca of San Onofre, at the point where it is crossed by the vein, and no doubt attention was drawn to this spot in the beginning, from the circumstance of native silver being exhibited even at the surface. Of the three parts of which the vein consists, the chief working was made on the middle one, which appeared the most productive. From this working some very rich ores of quicksilver were obtained, but after a brief working the vein became small and unproductive, and the mine was ultimately abandoned. The works were erected on a spot situated within a woody district, abounding in timber, suitable wood for charcoal and fuel; stone, lime, and clay for bricks. Throughout the whole interior of the district there is no water power capable of working machinery. At the Laguna, besides several small streams of good water for household purposes, there is a small lake about 50 yards diameter, the bottom of which, the natives say, cannot be sounded. It is always full of water, which does not rise during the rains, nor fall in the driest season. It is rather a singular fact that, at a distance of about 100 yards from the lake, there is an opening in the calcareous rock, which seems almost unfathomable, and which has no water. In several other places within the district similar openings occur, called *sotones*—generally, however, in basins between the mountains which have no other outlet for the water. The people of the district of El Doctor are in general of a mild, tractable disposition, and in that respect are greatly superior to the lower orders in other mining districts of Mexico.

Besides the mines above mentioned, there are others now working on a small scale, producing silver, lead, quicksilver, and orpiment. Gold is also found in the district, and at La Encarnación, in the neighbourhood of El Doctor, some rich iron mines are worked rather extensively by Mr. Hahn, who is able to compete in the markets of Mexico with the iron supplied from other quarters.

**THE ECTON MINE, STAFFORDSHIRE** (the property of the Duke of Devonshire), was formerly celebrated for its enormous produce of copper ore, but at present is unworked. The mine is situated 8 miles from the town of Leek, and near the little village of Warslow, in a range of limestone hills rising from the little River Manifold. The mouth of the drainage-shaft is situated at an elevation of 50 fms. from the river. The engine-house and a 15-inch cylinder steam-engine are still standing upon the shaft, but idle, and in a dilapidated state. Several trials have been made at surface on this and the Burgoyne property higher up the hill. At the foot of the hill, on the south-west, near the entrance to the mine, the heaps of attle or refuse are immense. The limestone rock is of varied character, some black and shaly, and other of a grey colour—the latter being the most productive of copper ore. The measures, or strata, are very curious, turning about in various contortions, and rising and sinking the one above or below the other. These are called "saddles;" and this peculiarity in the structure of the rocks, and the hardness of the ground, make the search for the lodes rather speculative, which has led to this mining field being somewhat neglected. There cannot, however, be any doubt that the hills of Ecton contain other deposits besides the enormously rich one which for many years yielded a profit of 50,000l. per annum. The mine is entered by an adit level, which for some fathoms is arched over where it passes through some loose ground; but once it enters the limestone, no further support is required. This adit is about 150 fms. in length to the drainage-shaft, at which point there is working a water-wheel at 50 fathoms from the surface, which keeps the mine drained. This wheel was erected about 24 years ago; its diameter is 33 feet, and breast 6 feet. The excavation at this spot is very large, as there is a capstan, and room for stalling for horses, which were formerly employed here. In the 30 fathom level, which is reached by convenient footway ladders, the mine was very productive, and the excavations are of immense size. From this to the 50 fathom level the workings are truly extraordinary. A light being placed in one of the upper openings (the 30 fathom level), and one lower down, at the 50, produced a striking effect. Here there is probably a clear opening of upwards of 350 feet in height, by an average width of 150 feet, some parts being wider, the whole of which has been worked out, readily accounting for the immense heaps of refuse outside. The mine is still deeper, but becoming at length unproductive is now idle—the only work in hand being that of keeping the mine drained by the water-wheel. Several unsuccessful trials have been made in the neighbourhood. One of the most promising now in hand is a mine about 4 miles from Ecton, called New York, from which several parcels of ore have been raised, and where they are sinking the shaft with a view to cut the lode in the favourable run of ground—the grey limestone.

**HEAVY MASSES OF COPPER.**—We have seen passing our office for a week past immense masses of native copper, of such weights as to require two teams to a waggon; and we take from Mr. McKnight's shipping books the weight of a few masses from the Cliff and Minnesota Mines. The following from the Cliff:—1470, 4600, 4096, 4006, 4286, 4200, 4300—whole weight 20,852. Every piece weighs 2 tons or more. Such immense masses of pure copper were never known in the history of mining. The copper has to be cut up with a long chisel, three-fourths of an inch in width, by chipping off piece after piece with a heavy hammer. An inventor of some machine for sawing or cutting this copper by steam-power would strike a vein of good fortune. The Minnesota mine is turning out masses of the same description and weights.—*Lake Superior Journal.* [Quartz rock, containing gold, has been discovered in some of the mines.]

## Mining Correspondence.

## BRITISH MINES.

**ALFRED CONSOLS.**—There is no change to notice in the lode in the engine-shaft, sinking under the 70 fm. level, since the last report. The lode in the 70 fm. level, east of shaft, is 5 ft. wide, nearly all solid ore, worth 80s. per fm.; this is further east than we have had any ore, except at the 70 fm. level. The lode in the 60 fm. level, east of the engine-shaft, has much improved within the past week, it is now from 2 to 3 ft. wide, and worth for copper ore 25s. per fm.; this is quite a new discovery, and looks very cheering. There is no change in any other part since the last report; the tribute pitches are looking well.

**BODMIN CONSOLS.**—We have discovered a slide in the north adit, which has been the cause of the lode being discovered; this is another favourable indication in favour of this part of the mine, and just the thing I have been expecting to cut. The shaftmen are employed stopping the bottom of the adit, which is producing good work in lead. We shall very soon be opening ground from which we shall make good returns. The other parts of the mine are just as last reported.

**CALLINGTON.**—The lode in the 125 fm. level north has improved in the past week—now about 1 ft. wide, producing from 7 to 8 cwt. of silver-lead ore per fm. The lode in the 125 fm. level south is at present small, producing occasional ounces of silver. The diagonal shaft is now down 4 ft. below the 112 fm. level—ground moderate for sinking; we have set the men to sink this shaft to the 125 fm. level, at 14d. per fm. We have holed the winze sinking below the 100 to the 112 fathom level, and commenced driving south—the lode in which is large, producing work of coarse quality. In the 112 fathom level north, at the south mine, the lode is about 8 in. wide, producing saving work. In the winze sinking below the 114 fm. level south no lode has been taken down since last report. At Kelly Bray, the engine-shaft is now down about 8 fms. below the 40 fm. level; lode about 1 ft. wide, with occasional small pieces of copper ore. In the 30 fm. level, at Cotehill Quay, 35 tons 10 cwt. 1 qr. of good quality copper ore.

**COMBLAWN.**—Our engine-shaft is now down 153 fms., and the old shaft is getting much smaller; consequently we have more ground to cut away, and raise the price to 8d. per fathom. I mentioned in my last that we had got down to another level, which I now find is driven about 10 ft. on a cross-branch of soft spar, and fine spots of lead, and I have not the least doubt of there being a great improvement when it intersects the lode.

**DEVON AND COURTNEY CONSOLS.**—We have a further improvement in the winze going down in the 50, more congenial ground for ore on each side of the lode there cannot be; it is a light blue killas, and easy for sinking, and the lode is more easy and larger than it was when reported last week. The lode in the 60 fm. level is also improved; there is more ore in it, and promising for a further improvement.

**EAST CROWDALE.**—The 40 fm. level west has improved since my last, laying open fair tribute ground; also the 40 fm. level east. No lode taken down in the middle shaft since last report on. Our tribute pitches are much as usual.

**EAST SHARP TOR.**—This mine is situated within 5 minutes walk to the north of Phoenix. The lode being parallel, and of great promise, is upwards of 30 feet wide, nearly all gossan of a good description. An engine-shaft (Hitchins's) has been sunk 16 fms., and intersected the lode; at this point it produces some splendid gossan, quartz, peach, and spar. There is not the slightest doubt but this lode will, at an increased depth, be found very productive.

**ESGAR LEE.**—The canter lode in the deep adit, west of the junction, is much the same as in my report of 3 ft. wide, looking promising, and will, on an average, yield 4 or 5 cwt. of ore per fathom. The canter lode in the 12 fm. level, east from the surface, is looking quite as promising as in my last, being 3 ft. wide, and yielding on an average from 10 to 15 cwt. of ore per fathom. I cannot speak of any alteration in the stopes; they will, on an average, yield about half-a-ton of ore per fathom.

**EXMOOR WHEEL ELIZA.**—In accordance with instructions, I have inspected this mine; and, in the first place, would observe, that although it has been asserted by some so-called practical mine agents that this mine is many miles distant from granite, yet whatever may have been said on this subject, it is entirely without foundation, for there are evident traces of granite but a short distance from the mine, running in a north and south direction. A short distance from the mine passes the Cornish granite, and a number of miners both in Devon and Cornwall; the principal cause is attributable to the near approach of that change of country. There is also abundance of elvan surrounding this mine. The killas on either side of the lode here is of a very congenial description for a deposit of copper ore. The peculiar advantages this mine has of water-power scarcely needs a remark, from the fact of the River Barle passing through it, between the water-wheel and engine-shaft, running in a north-west direction for a distance of five miles through Mr. Knight's property, in the north-west corner of the lode in this direction are granted to the company, the whole, therefore, be needless to assert that the mine may be worked to any extent without requiring steam-power. Having glanced at a few of the many advantages this mine has over mines in general, I may be proper now to take into consideration its relative advantages below the surface; with this view, I would first take into consideration the extent and quality of the gossan on the back of the three lodes at present laid open in this mine. The first lode, which is the lode in the 24 fm. level, is 3 ft. wide, and in my opinion, if not surpassing the lode in this direction, is in no single instance wherever this lode has been laid open at the surface, at the adit level, at the 12 fm. level, and the 24 fm. level, can this gossan be seen without carrying copper ore, increasing in quality and quantity as it approaches the deeper levels of the mine. This lode at the adit level is about 8 feet wide, carrying two well-defined walls of clay-slate; at the 12 fathom level east it is 7 feet wide, composed of pyrites, gossan, and muscad, spotted throughout with yellow copper ore; in the western end, in this level, the lode is 3 ft. wide, and carries a little bit of ore; in the 24 fm. level, it is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level east, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level, which is now in course of sinking below the 24 fathom level, it cannot fail to produce a large quantity of copper. The lode in the 24 fm. level, west, is 3 ft. wide, and carries a little bit of ore; the lode in the 24 fm. level, east, is 3 ft. wide, and carries a little bit of ore. In tracing this lode to the 24 fm. level, I find it in places to be about 5 ft. wide, carrying a large quantity of sulphurous mudiic, mixed with gossan, and copper ore. The mudiic is very strong and powerful, sufficiently so as to warrant me in saying, that however anxious may be the expectations as to the result of its being cut at the 45 fathom level



**WHEEL LANGFORD.**—In reference to our present prospects, I am happy to say that the copper lode, as well as the silver lode, are both looking well; and we have now another batch of silver ore, much larger than the last we sold; and Capt. Knott will in his next inform you of all particulars.

**WHEEL MARY ANN.**—Pollard's shaft is sunk 4 fathoms under the 60 fm. level; the part of the lode that is in the shaft is 2½ ft. wide, composed of can and good stones of lead. The lode in the 60 fm. level north is 2 ft. wide, and worth 202 per fm. in the same level south is 1½ ft. wide, and worth 107 per fm. The lode in the 50 fathom level south is 1½ ft. wide, and worth 97 per fm. The lode in the mine sinking under the 40 fm. level is as last reported. The lode in the 70 fm. level, south of the boundary, is 3½ ft. wide, and worth 141 per fathom. The lode in the 60 fm. level, south of Barratt's shaft, is 2 ft. wide, and worth 121 per fm. Barratt's shaft is sunk 8 fms. under the 60 fm. level, where the lode is 4 ft. wide, and worth 221 per fm. The lode is very productive.

**WHEEL TREMAYNE.**—At Madron's shaft, on the south lode, in the 70 fm. level west, the lode is 1½ ft. wide, worth 71 per fm. In the rise in the back of the above level the lode is 1½ ft. wide, worth 51 per fathom. In the 60 fm. level west the lode is 1½ ft. wide, worth 31 per fm. At Laurie's shaft, on the north lode, in the 30 fm. level west, the lode is 2 ft. wide, unproductive. In the middle whim-shaft, on the north lode, sinking below the adit level, the ground is soft for sinking, and is progressing favourably. At Champion's shaft, on the north lode, in the 100 fm. level east, the lode is 1 ft. wide, worth 41 per fm. In the adit level, driving east on a north lode, the lode is 6 in. wide, producing some tin, not of much value. At Painter's flat-rod shaft, on the south lode, the men have been engaged cutting and putting in penhouses. They are now sinking for bearers and cisterns, to fix a life in the 40 fathom level; the lode in the bottom of the adit shaft is 3 ft. wide, composed of floukan, capels, and mandic, mixed with halvans, spotted with ore, not to any value. In the 40 fm. level east the lode is 1½ in. wide, opening tribute ground; ditto west the lode is 6 in. wide, opening tribute ground. In the mine sinking below the 30 fm. level, 12 fms. west of shaft, the lode is 9 in. wide, opening tribute ground; in the mine and stops 30 fathoms west of shaft, sinking below the 30 fm. level, the lode is 15 in. wide, worth 121 per fm. In the 30 fm. level, driving west of west whim-shaft, on the south lode, the lode is 1 ft. wide, producing good stones of ore; the lode in this level at present has a more promising appearance than it has had for the last 30 fms. driving. At new shaft, in the 35 fm. level, driving west, on a south branch, the branch is 6 in. wide, producing spots of ore. At Allan's shaft, on Allan's branch, in the 53 fm. level west, on a south branch, the branch is worth 41 per fm.; in the cross-cut driving north, in the 53 fm. level, we have intersected a branch producing some tin, not of much value. The boundary shaftmen have commenced sinking below the 53 fm. level; the floor, or spar, that has been reported as having been found since, is especially disappointing. A new shaft coming in under the spar, with good branches of tin, the shaft is worth 301 per fm. In the cross-cut driving north, west of Harvey's shaft, on Wheel Bonnet lode, we have not intersected the lode yet. Our tribute department is looking well.

**WHEEL TRESCOLL.**—We have now a very fine course of tin gone below the 20 fm. level, and is likely, from its appearance, to hold good for a great depth; we have several other large lodes south, very rich in the adit level, that have never been seen below that part, and are now driving a cross-cut south in the 30 fm. level to intersect them. We hope to cut some of them next month, and no doubt we shall find them equally rich as those we are now working on, which have now produced more than 18000 worth of tin, at an average price of 541 per ton; we shall then have one of the richest tin mines in the country. We have put part of our additional stamps to work, and shall attach the remainder shortly, and then we shall make regular profits; and I have no doubt we shall pay very good dividends by next spring. We shall sell a good parcel of tin this month, and a much larger quantity next month. I will challenge any tin mine in the kingdom to show sales of tin at such a price as we get here.

**WHEEL VINCENT.**—Sept. 4.—Since last week our lode in the east end is much improved; the lode is about 3 ft. wide. Our west end is much the same as last week; the lode is 18 in. wide, producing tin. Both our stamps are at work, and as our prospects are very good, we shall be able to keep them at work.

Sept. 11.—Our lode in the east end is 2 ft. 6 in. wide, producing good work for tin, and very regular, with two well-defined veins. We have six men employed in this end, who are at work day and night. We are also stopping the back of the western end, yielding good work; the lode in the western end is small at present. We have two men employed in coasting on the north and south lodes. Our stamps are at work both night and day.

#### FOREIGN MINES.

**ALTEN MINING ASSOCIATION.**—The following mining report, from the 6th to the 27th August, was received yesterday:—

**Rapais.**—The workings have undergone no material change since the date of our last report. The improvement noted in the shallow adit workings still holds good, and the quality of the tribute returns from this part of the mine is fully equal to that of any former time. In the bottom workings, however, the ground is very hard, and the ore more disseminated, which greatly retards the good progress we have been making. We are daily expecting to hole the 30 fm. level with the new winze, after which we shall resume operations on ore ground in this part of the mine, and hope hereafter to make rather better returns. We still continue to drive down from the mine, and hope, by next post, to have brought down the whole of the summer's produce.

**United Mines.**—A trifling improvement has taken place on the new discovery on Ward's lode, but as yet without materially increasing the returns from this mine. We, however, hope that it will open reserves of tribute ground for the winter. **Old Mine.**—A horse of greenstone in Slings' sink occasioned a deterioration of the lode in the commencement of this month; but it has now again considerably improved, and prospects equally as good, and the returns as remunerative as heretofore. The north-east sink is still promising, and yields some good ore. The ground in the sink on the main lode, north-east of Bergmeister's, is still hard, but the prospects are rather more cheering; the lode now dips rather more, and some good stones of ore have now made their appearance. There is no alteration to be noted in the adit level, where the ground is hard, but favourable for driving.

**Ruper's.**—The tributers have produced some good parcels of ore from this mine of an excellent quality, but the lodes are again somewhat deteriorated.

**Mancur's.**—The prospects are improved, and the quantity of the returns is somewhat better. The tributers have discovered a very promising lode to the south of Mancur's shaft, from which some good prills ore has been produced.

**Michell's.**—The lode in the level is rather poorer than usual, but we expect it will shortly improve; the ground is somewhat harder, but the prospects on the whole are by no means discouraging. The tribute parcels at this mine are not looking quite so good, but they continue to yield some small parcels of ore from Nellin's lode.

**Carl Johan's.**—The sink at this mine has again deteriorated, and we have found it advisable to suspend its further prosecution, for the purpose of employing the men on the new discovery at Mancur's, where their labour will be more remunerative. This working will be resumed in the winter. On account of the ore being more disseminated throughout the lodes, the percentages of last month's delivery has been rather lower than we expected; we, however, expect that it will be better next month.

**QUENANGEN MINING ASSOCIATION.**—Despatches received yesterday:—

**Quenangen Copper Works, August 28.**—I spent several days last week at the mines, inspecting the work of the workings and the new discoveries, as well as in continuing my survey of the adit level, and the great pleasure in being able to bring you the good reports handed you by the last two posts. The new discovery has yielded a small quantity of very good ore, but the lode is still unsettled and irregular; its prospects, however, are unusually flattering, and profitable returns are daily being made. At C the prospects, on the whole, have also materially improved; the lode in the level, however, is not quite so rich, but its produce is good and profitable, and it continues to make reserves of tribute ground; a short distance from this level, on uncovering the back of the lode, which had before been buried in earth to a great depth, we found a most fruitful course of yellow ore, and hope shortly to make some good returns from this place. The improvements in both these places are highly encouraging, and the documents securing the last discovery to the association reached me with this post. The adit towards the east has deviated a little from the true direction, in consequence of the needling having been affected by the iron in the country. The result of my last survey gives a distance of somewhat less than 20 fms. still to drive before the lode will be intersected. At lode A, the progress has been with the sink, and the lode in the bottom was materially improved; it is, however, still very small, but holds out hopes of becoming larger as the workings are extended in depth. The prospects of the mines were highly satisfactory; the new buildings erected at the mines and at Kjekkar are well adapted to their several uses; and, on the whole, the general appearance of the works has never looked more healthy and cheering, and we have every reason to hope that your expectations will hereafter be fully realised.

**LINARES MINES.**—The following has been received from Mr. H. Thomas: **Linares, August 31.**—In cutting the pit in the 45 fm. level, at Wilson's shaft, the men are opening on a fine bunch of lead, all of which was left standing by the side of the level when driven on by the old men. San Juan shaft is sunk under the 31 fm. level 9 varas, and it rose to six men for the month of September, at 200 reals per vara; the ground continues favourable. Shaw's shaft is sunk under the 31 fm. level 11 varas 2 ft. 6 in., and is sunk to six men at 300 reals per vara, and the lode in the bottom was materially improved; it is, however, still very small, but holds out hopes of becoming larger as the workings are extended in depth. The prospects of the mines were highly satisfactory; the new buildings erected at the mines and at Kjekkar are well adapted to their several uses; and, on the whole, the general appearance of the works has never looked more healthy and cheering, and we have every reason to hope that your expectations will hereafter be fully realised.

**Stock Account to 31st August.**

Weighted in this week	Tons	26	14
Shipped from Malaga, per Farmer		11	6
Seville, per Bastia		34	17
Remaining at Linares		81	14
At Linares		141	16
At Malaga		68	0
Total in store		241	10

#### CARBONA MINING COMPANY.

At a general meeting of adventurers, held at the mines, on the 2d inst., the accounts for the seven months ending 31st July were presented, showing:—**Tutwork cost, 542s. 4d.; merchants' bills, 636s. 12s. 10d.; lords' dues payable on tin to 31st August, 51s. 7d.; 1883s. 19s. 4d.**—By deposits on shares, to 31st August, 920s. 10s. 2d.; tin sold 1st May, 1850s. 22s. 5s.; ditto 21st August, 69s. 3s. 9d.—leaving balance due to pursuer, 172s. 0s. 5d.—Returns were also laid before the meeting, giving most explicit details of all charges in merchants' bills and items in tutwork cost.

The following report, from Mr. Wm. Vawdrey, the pursuer and manager, and Capt. E. Easton and W. Truman, underground agents, was read:—

Sept. 2.—Our expenditure in these mines, from commencement of operations in Sept. 1849, to July, 1850, being 11 months, amounts to 7977l. 11s. 6d. for labour, and 1030s. 16s. 1d. for machinery and materials. The items are detailed in tabular statements, accounts, &c.

ing present and former reports. The engine-shaft is now down 23 fms. in sinking which we have with serious impediments, arising from the decomposed character of the formation resting on the granite, which we have hardly yet cleared, requiring large quantities of timber, and much time properly to secure. As we progressed in depth we occasionally met with leaders of very rich tin, inducing us to believe that when once we reached the regular formation of the district we should find the lode largely productive. The 15 fm. level is driven 37 fms. east from the engine-shaft, giving backs working in a tribute of 7s. 6d. in the 12. The same level is driven west from the engine-shaft 44 fms., also giving backs working in a tribute of 6s. 6d. in the 12. A shaft west of engine-shaft is sunk 19 fms. from surface, on a lode 3½ ft. wide, yielding good tin. The 25 fm. level we are preparing to drive east and west from the engine-shaft, which shows indications, not only of our passing from the unsettled formation into a firmer and more settled country, but moreover shows the lode in a greatly improved state, and which at once yields a rich mineral produce. We met with this great improvement in country and lode in cutting a pit, and from what we can now see, we are led to believe that our 25 fathom level, east and west, will be eminently productive. At several points we have men working at a tribute of one-third in the 12, who have raised about 1000 worth of tin of first-rate quality. The number of tributers will rapidly increase, and the stamps will, in future, be kept working night and day. Looking at our prospects as they now show themselves, we are led to believe that we are on the verge of opening into considerable and lasting improvements. The engine-shaft, having passed through the disordered formation is now down 25 fms., and we have set another 10 fms. at 51 per fm., which we hope to see completed to the 35 fm. level within the next two months; the lode, in the present bottom of the shaft, is upwards of 5 ft. wide, carrying a rich feeder of tin on the north, and improving for tin throughout every foot we sink thereon. The lode in the present ends, east and west, at the 25 fm. level, is worth about 81 per fm., while the cost for driving is only 20s. per fm. In the course of a few months, when we have reached another level, to pass under our present workings, these mines will be in a state to yield good profits to the shareholders. In the centre of our shaft we have recently discovered a large and very promising copper lode, which, in depth, will undoubtedly yield no small return, and contemplates seeing it at a 35 fm. level by means of a cross-cut from our present workings, on the blue or tin lode, and which we hope to accomplish at a trifling expense.

#### HERODSFOOT MINING COMPANY.

A meeting of adventurers was held at the offices of the company, Georgeyard, Lombard-street, on the 9th inst., when the accounts for the months of March, April, and May, were presented, which showed a profit upon the three months of 115s. 6s. 4d.; amount in hand, 587l. 17s. 10d., and a balance of assets over liabilities of 197l. 19s. 1d.—The following is Mr. Wolferstan's report upon the present state of the mine:—

Sept. 7.—The engine-shaft is down 127 fms. from surface, and the men have now recommenced sinking on the course of the lode, which is 2½ ft. wide, containing stones of ore. The 127 fm. level north is extended 10 fms.; the lode in the present end is large and kindly, producing stones of ore; the 137 fm. level south is extended 6 fms. from the shaft, and is worth 91 per fm. In the 117 fm. level north the lode in the end is worth 81 per fm. In the 117 fm. level south the lode in the end is worth 101 per fm. In the 106 north lode in the end is poor, but easy for driving, and may be expected to improve; in the 106 south we are driving by the side of the lode; in the back of this level the lode will, on an average, yield 12 cwt. of ore per fm.; generally the lode is large, and in good ground, and occasionally has yielded 3 tons of ore per fm. The 94 north is suspended; the lode in the back is worth 9 cwt. of ore per fm.; the cad is home to the slide. The 82 north is driven 50 fms. north of the slide, and being poor we think it advisable to suspend until the 106 is further advanced; the 82 south is now driving by the side of the lode; when last taken out it was worth 20 cwt. per fm.; in the stops immediately behind the end the lode is worth 30 cwt. per fm. The 72 south was resumed about five months since, and has been continuing to improve; it is now worth 30 cwt. per fm.; we have not yet begun to stop the back. Boase's shaft is sunk 2½ fathoms from surface; the ground is very favourable, and several small branches have been met with; we shall continue to sink some time longer. A diminution in the profits of the mine since the last meeting has occurred, and which is attributable to the fact that has taken place in the price of lead, and to the increase in the cost of the mine, caused by the erection of new stamps, and other indispensable and permanent surface work. I believe, from our present prospects, I am fully justified in saying that we are on the verge of being able to increase the returns, without any addition to the monthly cost.

#### KINGSETT AND BEDFORD MINING COMPANY.

At a general meeting of adventurers, held at the Half Moon Hotel, Exeter, on Monday, the 9th inst.—W. TRAVER, Esq., in the chair,—the accounts of the pursuer were produced, showing—Balance in hand last account, 527l. 7s.; received on arrears, 202s. 25d.; 7s.—Cost for June, 142s. 10s. 1d.; July, 108s. 14s. 2d.—leaving balance in hand, 31s. 2s. 9d.; add, arrears of calls still due, including 81. 10s. on forfeited shares, 49s. 15s.—522l. 17s. 9d.—Liabilities due from company, 80l.; estimated cost-sheet for August, 1007l.; ditto Sept., 1007l.—2807l.—A call of 5s. per share was made, and a special meeting is to be convened, to forfeit all shares on which arrears of calls are due.

The following reports, from Capt. Spargo and Harris, were read:—

Sept. 7.—In handing you my report of this mine, I think it not necessary to enter into a long detail respecting our late proceedings, but simply to state the present appearance of the mine in general, and the necessary work to be carried on.—1. The stops throughout are much improved since last report, which we set on Friday at 22. 17s. 6d. per fm., and the new rise behind the sink, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—2. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we thought poor in driving, will be taken away and sent to market.—3. The lode in the hard rise is generally improved—all saving work.—4. We have cleaned up the old workings a little to the north of Luke's shaft, and have broken some excellent stones of lead; the lead is now coming down by the process of cleaning, that I cannot exactly state what quantity we shall shortly have a crop of our mine. I am glad to tell you our stops are looking exceedingly well, in fact, never looking so well before. Also, the new rise in Bedford is now much improved to what it was last week, when it was rather poor; but we must not take much notice of that, as lodes will alter, and now it is giving large rocks of lead. The lode is between 4 and 5 ft. wide, with good spar and prills; very promising for a good course of lead. We are dressing all the work that comes from the lode, and it turns out very well. The hard rise is producing more lead now than it has for the last nine or ten months. The new rise, which was the new rise behind the sink, is now marked in the plan, but could be plainly shown about 6 ft. from the end, is greatly improved; it exceeds the stops; I have sent some of the lead I broke on Friday; here it is 4 ft. wide, leady throughout; all the ground we have driven through, which we



viding 4021 by 26 for the average wages of men in his view of that system, throwing all their working expenses overboard? I would also ask him, if he is not enough of a critic to have curtailed his letter, and come to a few plain statements that would have convinced the public that Wheel Golden is a dividend-paying mine, by stating the quantity of ore raised by tributaries each month, and also by tutworkmen, with tutwork expenses, and the dressing charges attached to the same, with the number of fathoms of ground open by tutworkmen, not forgetting the lords' dues, agency, engine expenses, carriage of ore, timber, iron, smiths', carpenters', and other incidental expenses? Were I to become a shareholder, these are statements I should look for. As to tributaries stealing the ore, he also should have omitted, and stated that working too near would have blocked up the levels, so as to impede the working of tutworkmen. If his men are inclined to steal ore, it matters not if they work 10 fms. or 50 fms. behind the ends. I certainly felt rather unpleasant at Mr. Thorne remarking my statement was unfair, and calculated to shake the confidence of the adventurers, or prejudice them against their agents, as it was not my intention; and am still inclined to think, if the mine is a *bona fide* speculation, the effect will be quite the reverse. Mr. Thorne's winding up is certainly the most satisfactory part of his letter, and, if substantiated, must set all right; but Mr. Thorne will not take it offensively when I tell him that I am not clever enough to know how a great many dividends have been paid of late in both mines and railways; but I hope Wheel Golden dividends will be of long continuation, and not a mere flash in the pan.

N. ENNOR.

## THE TINCROFT MINE.

SIR,—I was taken by surprise on looking over your Journal of the 31st of August, to see my letter followed by that of the "Burnt Child." The very favourable reports on that mine, for some time past, certainly drew my attention. I know the situation to be favourable, and fully expected it to be genuine, and felt confident she would shortly appear high in the list of dividend-paying mines. It certainly becomes the duty of those concerned to admit or confute the "Burnt Child's" statement. If their reports be correct, there can be no difficulty to confute it; besides, the public is entitled to their reply, otherwise such reports are not worth reading.

W. H. L. COMBE, Sept. 10.

## WINDING-UP OF THE ANGLO-MEXICAN MINING ASSOCIATION.

SIR,—Heretofore you have so readily aided in trying to open the eyes of the unlucky holders of shares in the Anglo-Mexican Mining Association, as to the real state of their affairs, that for the further information of this hapless class I am induced again to trespass upon your columns, and beg for an insertion in the *Mining Journal* of the enclosed copy of a letter, recently addressed by me to the secretary of that association.

The circumstances under which the advance therein referred to was made to the Mexican and South American Company, in 1846, by certain directors of the Anglo-Mexican Mining Association (some of whom were also, at the very time, directors of the Mexican and South American Company) appear to be so irregular, that I unhesitatingly affirm, that all the directors who were parties or privies to that advance are personally responsible to the Anglo-Mexican shareholders for its repayment, in case of any failure on the part of the Mexican and South American Company to reimburse the moneys lent within a reasonable period, and this responsibility must be enforced, unless the directors of the Anglo-Mexican Mining Association do their duty without further delay. At the same time, it must be confessed, that the case before a court of law would have a comical appearance—Messrs. A., B., and C., directors of the Anglo-Mexican Mining Company, versus Messrs. A., B., and C., directors of the Mexican and South American Company. The matter, however, is rather too grave a one to laugh at; but the result will, I hope, teach the parties in question that directorships and companies are not to be kept up for the convenience of the few, but for the benefit of the many.

Field House, Whitby, Sept. 10.

CHRIS. RICHARDSON, Jun.

SIR,—At our interview in May and June last, I expressed, on behalf of my father, his dissatisfaction, as a large holder of Anglo-Mexican mining shares, at the proceedings of the managing directors of the Anglo-Mexican Mining Association, both with respect to the loan of £5000, granted by them to the Mexican and South American Company in 1846, and also to the subsequent neglect of the same directors in not enforcing a regular payment of interest on the loan in question. In fact, up to May last, no interest whatever appears to have been paid by the Mexican and South American Company, and it would also appear that, as the money was not loaned on any "sufficient security," it was not loaned in conformity with the Anglo-Mexican Mining Company's Deed of Settlement.

"Under these circumstances, I think it proper to state, for the information of the directors of the Anglo-Mexican Mining Association, that unless the aforesaid principal sum of £5000, and the interest now due and owing thereon, be recovered by them on or before the 20th day of October next ensuing, so that a further division of the assets of the Anglo-Mexican Mining Association may then take place, I shall proceed to take such steps (under the written authority given to me) as may be requisite to enforce a final winding up of the Anglo-Mexican Mining Association, under the direction of the Court of Chancery, and in conformity with the provisions of the 11th and 12th Vic. chap. 45, and the 12th and 13th Vic. chap. 105."

A. Godfrey, Esq., secretary to the Anglo-Mexican Mining Association.

## MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

Knowing your anxiety to receive communications respecting the mining districts, and to furnish information, through your columns, I am induced to forward a few remarks relative to what is doing in this part of the country.

Some few days since, business called me to the VENTON and BUTTERCROFT Mines, where I was much gratified to find so many hands employed in erecting surface buildings, machinery, and other necessary works, preparatory to developing a splendid lead lode, which traverses both sets: its width is about 4 ft., and it holds out much promise to the shareholders. Its composition is gossan of the first character, spar, mundic, &c. Such a lode, I think, cannot fail to turn out an abundance of rich silver-lead in depth. From the appearance of the ground, I do not doubt but that, with a small outlay, these two mines will shortly rank among the dividend-paying ones of the district. Much credit is due to the captains for the judicious manner in which the various operations are being carried on.

The next I wish to draw your attention to is the EAST and WEST SHARP TON. I have lately had a surface view of these mines, and saw one of the largest copper lodes I had ever met with, and which, from its character, is likely to turn out a large quantity of copper. The mines are in active operation, and are likely to have a fair trial. I am sorry to say that many good mines have been stopped for the want of this, particularly where such large lodes have been found, parties do not calculate on sinking to a proper depth.

My next visit was to PHOENIX: this mine is too well known to require comment; however, there is one of the richest piles of copper ore I ever saw. Before proceeding further, allow me to remark that this now rich mine was for many years a very poor one, and had been worked by other parties to a great loss, and, no doubt, would have been again given up as a worthless concern by the present company, had it not been for the persevering energy of Capt. S. Seccombe, he at all times contending that there was a large deposit of riches there, and I scruple not to say, that if companies were to let their own agents work the mines according to their own judgment, and not bring in others to interfere with them, many more good mines would be brought out.

WEST PHOENIX has recently been recommended by that interesting gentleman, Henry Vatcher, Esq., of Exeter: this is only one among the many others this gentleman has set to work in this neighbourhood, which I shall more particularly refer to as I proceed. This sett adjoins the Great Phoenix, and is on the same lodes. This shows every probability of her proving as productive as the former; and I feel satisfied that the resources will be thoroughly and skilfully proved.

WEST CARADON still maintains its pre-eminent position, and is a first-rate and lasting mine.

At SOUTH CARADON, I am happy to inform you, they have had an important improvement recently in the north part of the sett, having met with a good course of ore on what is called Vivian's lode, in the West Caradon, and is likely to result in much profit to the shareholders. There has been a slight improvement in the south part of the mine. This concern is more than likely to be a good mine for many years to come. Here I have to remark again, that this mine is, and ever has been, under the management of the Messrs. Clymo: they have not been controlled from any other quarter; had it been so, I doubt not but South Caradon would be in the same position as many others.

WHEAL TRENEAR is a sett recently taken up by Capt. Hale and Mr. George, innkeeper, of Crow, near St. Cleer. It is a continuation of the same lodes as the Trethvey copper mine. Little has been done here, except the driving of a shallow adit, but sufficient to warrant a further outlay. I have seen some very excellent stones of copper ore broken from the lode in the adit.

CARADON WHEAL HOOPER is forsaken, and for no other reason than that parties prematurely expected a paying mine. There have been sunk 66 fms., cross-cut about 180 fathoms; there have been only three lodes intersected out of eight, which the sett is known to possess; the explorations on the course of the lodes amounted to 70 fathoms, thus exhibiting the impropriety of a committee interfering with the agent; for I feel assured that had he been allowed to work the mine according to his own judgment, she would have been a new dividend-paying mine.

TRETHVEY COPPER MINE was the maiden adventure of Henry Vatcher, Esq., in this district, and there is every prospect of his enterprise being remunerated by the stuff brought to surface. I feel perfectly satisfied he has made what we call a very good plant, and that his co-adventurers will not regret having followed such a leader.

CARADON VALE, under the same management, exhibits every thing promising, and after a little further exploration, will take a legitimate position.

At WHEAL GILL, I understand, operations have been commenced, under the same able management as the Trethvey and other mines. If we may take counsel from the agents and working men, I feel satisfied there is an immense and valuable piece of ground to be wrought in this district; and I should strongly urge on mining capitalists to turn their attention hither, as I feel convinced they will never have occasion to regret doing so. I reserve any

further remarks for a future communication. Irrespective of all private considerations, I look upon the St. Cleer district as fully equal, if not superior, to any this county can produce.—September 4.

At Wheal Russell, below the 85 fm. level, the men have cut into the lode 12 ft., and are not yet through it, producing good stones of rich copper ore, and the results are considered likely to be very great.—Trevistock, Sept. 13.

SOUTH CARN BREA.—From information received through Mr. Joseph Lyle, it appears they have opened on seven splendid lodes in this sett.

WHEAL ARTHUR (Calstock).—The reports of this mine continue to be highly favourable. After the adit level is cleared out (of which 100 fms. have been completed), it is expected that sufficient ore can be raised to pay all the expenses of any machinery that may be required. It is said, that the Bernalston great silver-lead lode runs through the centre of Wheal Arthur, with many other copper lodes, and that the cross-course is the same that runs through the Great Wheal Maria, and which made all her riches.

WHEAL ZION (Calstock).—Ten silver-lead and copper lodes have been discovered in this mine, and samples of ore from one of the lodes have produced from 50 to 200 ozs. of silver to the ton of lead. One lode alone is reported by the captain to be worth 10,000.

GUADALCANAL SILVER MINING ASSOCIATION.—No decisive steps have as yet been taken towards the reconstitution of this company. A number of the old shareholders have expressed their intention, in the event of a new association being formed, of taking a considerable interest in the property. A meeting of the former directors is to take place on Wednesday next, when, in all probability, measures will be proposed to reconstruct the company.

QUEBEC MINING COMPANY.—From the report issued by this company, it appears that their affairs are not in a prosperous condition, and that having taken possession of some land not belonging to them, they have been threatened with legal proceedings. A Mr. Allan Macdonnell, who it may be remembered led the Indians on to the attack made on the company's property at Mica Bay, and whose statements must, therefore, be very cautiously received, has published a long letter in the *Canada Journals*; in this he states that the company never possessed the island of Michipicoten, but that being in treaty with the Indians for the sale of it, they dispatched parties to England to negotiate with capitalists for its disposal; these had sent out two gentlemen to inspect it; the company's representative had been obliged to apply to the Indian chief, Puckewance, and obtain from him permission to explore and examine the island for a period of one month only. This has been prolonged, but the Indians appear to have an aversion to the company making a permanent location there, and the worst feeling appears to exist between Mr. Macdonnell, who is their leader, and Mr. Bonner, the company's representative. Some of the shareholders express an opinion that a committee of investigation should be appointed, as the company has now been some time formed, and no definitive working course has been adopted.

WEST DING DONG (tin), in the parish of St. Creed, near Penzance, has just been commenced by a respectable company of adventurers, at 1-20th depth. The mine is divided into 128 shares, which have been readily taken up at 11. each. Operations were commenced by clearing the adit at the west of the sett, and taking up a shaft at the eastern end of the late workings, of which latter no one can give any satisfactory account. Finding that all the timber work had failed, four other shafts have been taken up westward, which have been spilt, or timbered, half the distance, about 100 fms.; only two arches of ground were found in the distance of 200 fms., both being rich in good quality tin, about 1 ft. wide. Good tin ground has been found in the bottom of the eastern shaft at 10 fms., but on following westward no bottom has been discovered at 11 fms., and by a cross-cut north, three other parallel lodes have been found within 6 fms. of the south or standard lode. Three or four other lodes cross at different angles. In addition to these advantages, a good stream of water runs by the sett, and it is believed that a wheel of about 36 ft. diameter will draw the water—at present very trifling—to the depth of 60 fms., and work stamps at the same time. It is considered by competent judges, that West Ding Dong is a fair speculation, and likely to prove remunerative to the adventurers.

WHEAL PROVIDENCE (silver-lead and copper).—This promising mine has lately been inspected by Mr. Evan Hopkins, F.G.S. From the tenor of his report, inserted in another column, it appears that the mine is situated in the metalliferous clay-slate, about one mile to the north of the Devon Great Consols. From the general formation, the gossan, composition and structure of the lode, an outlay has been recommended, and there is every prospect, that with good management a lasting and valuable property will be developed.

STRIKE AT MONKWEARMOUTH COLLIERY.—We regret that the coal hewers at this extensive colliery, to the number of some two or three hundred, on Monday last struck work. As a consequence of this, Mr. Burns, the viewer, applied to the magistrates for warrants against the men who had absented themselves from work without leave. On the day following, about 20 families were evicted from their houses, and encamped at Southwick, near the town. It appears the great cause of complaint is, that the proprietors wished to change the mode of working, and, instead of paying by the yard, as heretofore, introduced that by the score. At a meeting held in Monkwearmouth, a pitman of the name of John Hebdon was called to the chair. It was then stated that the average price was 3d. per yard for 10 yards to the score, would be 7s. 6d., 1s. 6d. was paid for filling, and 2s. 6d. for filling, making 11s. 6d. per score; thus the master wished to reduce to 8s. per score; the men have to find their own gunpowder and fill, which, if carried out, would make a reduction in every man's wages of from 2s. to 1s. 9d. per day. Great irritation was likewise expressed at the ejectments which had taken place, and threats were used of legal proceedings being resorted to. There are now 260 hewers on strike, and 150 off-hand men were working at the colliery. It is hoped that the affair will be speedily settled by arbitration, as in the event of long delay, considerable distress will be occasioned, as well as ill-feeling engendered.

At Shotton, in Durham, a new seam of coal has been found nearly 6 ft. thick. The Dean Forest coal (considered equal to Walls-End) is likely soon to be raised in sufficient quantities to supply the markets of the West of England.

IRON VESSELS.—An official return respecting iron vessels, just published, gives the following results:—Return of engines ordered for iron vessels, distinguishing those appropriated, and those not appropriated, to such vessels: *Sinuous*, 780 horse-power, *Vulcan*, 700 horse-power, *Megara*, 556 horse-power, unappropriated. Iron vessels sold, and for what: *Recruit*, 462 tons, sold for 4500*l.*; *Ruby*, 73 tons, sold for 20*l.*; without engines; *Grappler*, 557 tons, sold for 560*l.*; with engines; *Llewellyn*, 671 tons, sold for 17,500*l.*; *St. Columbia*, 720 tons, sold for 18,000*l.*

COMPLETION OF THE BRITANNIA BRIDGE.—After some years of unremitting labour, the engineers connected with this great work safely lowered the "last" of the Britannia tubes to its permanent resting-place yesterday. The Carnarvonshire end of the tube was lowered 3 feet, the opposite end being joined on to the Anglesey large tube in the interior of the lower on the Britannia Rock, and, obedient to the law of the novel operation, the centres of both tubes, as before, were raised up several inches. The Government officer will be down on an early day, to inspect the entire structure, preparatory to its permanent opening. Nothing beyond a mere fractional deflection has been observed to take place in the tube that has been opened since March, and which has been subject to the constant transit of heavy trains and traffic. Some curious acoustic effects have been observed. Pistol-shots, or any sonorous noises, are echoed within the tube half-a-dozen times. The cells of the top and bottom are used by the engineers as speaking tubes, and they can carry on conversations through them in whispers; by elevating the voice, persons may converse through the length of the bridge—nearly a quarter of a mile. The following is an official return of the cost of the entire structure:—Pedestals and abutments on Carnarvon side, 17,459*l.*; Carnarvon-tower, 28,626*l.*; Britannia-tower, 38,671*l.*; Anglesey-tower, 31,480*l.*; pedestals and abutments on Anglesey side, 10,470*l.*; lions, 2048*l.*—total, 158,704*l.* Wrought-iron used in tubes, 118,546*l.*; cast-iron in tubes and towers, 30,619*l.*; construction of tubes, 226,234*l.*; pontoons, ropes, capstans, painting materials, 28,096*l.*; raising machinery, 9782*l.*; carpentry and labour in floating, raising, and completing the bridge, 25,498*l.*; experiments, 3986*l.*—total, 601,865*l.* The total weight of each of the wrought-iron roadways now completed represents 12,000 tons, supported on a total mass of masonry of 1,500,000 cubic feet, erected at the rate of 8 feet in a minute.

BLACK-LEAD IN NEW BRUNSWICK.—Within a mile and a half from this city, near the Falls, a discovery, consisting of black-lead, was a short time since made, which bids fair to become a great and valuable staple article of export from this province, equal to gold itself. A company, consisting of six spirited gentlemen, was at once organised; they leased the ground from the Government, consisting of a superficies of three miles in extent, and set men to work to dig. A specimen of this lead, got out yesterday, may be seen at our office; it is as pure as if it had been manufactured for use; whereas, in England, whence we obtain our black-lead, the yield is only 70 per cent. to the miners, the other 30 being of foreign substance. The supply near the Falls is inexhaustible. The surface of the earth for two miles is coated with it, and the deeper it is dug the purer is the quality. Millions of tons of black-lead, superior to any in the world, now lie at our feet, for use and exportation; and our readers may have some idea of the value of the article, when we inform them that our merchants have been in the habit of importing black-lead from England, and paying 38s. per cwt. for it. The article, as it is dug, will command in the English market 20*l.* a ton, and a much higher price in the markets of the United States, where, we are informed, the duty is but nominal. The St. John Mining Company, the designation they are known by, have already shipped 44 cwt. of New Brunswick black-lead to Liverpool; to New York, 240 cwt.; and as much more to Boston.—*St. John's (New Brunswick) News.*

[The term "black-lead" used here is evidently a misnomer, no such mineral existing; the so-called black-lead is a composition of carbon and iron, named plumbago, from its drawing like lead, and graphite, from the Greek "to draw." The purest and most esteemed is found at Borrowdale, and is used for the manufacture of pencils; the more common sort is used for the purpose of making crucibles, vulgarly called black-lead, and in a powdered state is used to diminish friction, and prevent iron from oxidation. Its localities are numerous.]

## Current Prices of Stocks, Shares, &amp; Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

Bank Stock, 6 per Cent., 214 15	Belgian, 41 per Cent., 204
3 per Cent. Reduced Ann., 97 7	Dutch, 34 per Cent., 378
3 per Cent. Consols Ann., 96 1/2	Brazilian, 5 per Cent., 231 3
31 per Cent. Ann., 294 1/2	Chilian, 6 per Cent., 103 1/2
Long Annuities, 8 1/2	Mexican 5 per Cent., ex Coup., 29 1/2
India Stock, 10 1/2 per Cent., 266	Russian, 5 per Cent., 110 1/2
3 per Cent. Cons. for Acct. 15th Oct. 96 1/2	Spanish, 5 per Cent., 124 1/2
Excheq. Bills, 1000 <i>l.</i> , 11d. 66 3/4 pm.	Ditto 3 per Cent., 371 1/2

MINES.—Although the share market was not very active in the early part of the week, we find that, on the whole, a fair proportion of business has been transacted. The demand for nearly all the leading mines has been maintained, and there is still a lively inquiry for South Basset, North Pool, Alfred Consols, Tremayne, Devon Great Consols, Treviskey, South Frances, and many others.

But little alteration has taken place in the metal market during the week. Although sales of copper have been made above the market price, the smelters did not advance the standard at their last meeting. The iron market has shown somewhat more life towards the end of the week, which encourages hopes of an early improvement. Lead is firm; tin continues dull; and tin-plates are in good demand, makers being very full of orders.

At Wheal Russell they have cut into the lode in Richards's engine-shaft 10 ft., and not through it, from which some fine ore is raising, and they expect to sample 25 tons in a fortnight. The haul pitches set at 7s., 10s., and 13s. 4d. in 12: 10 fms. deeper they expect to cut the junction of two lodes.

At Wheal Crebor they have made a great improvement lately in the 40 end, west of Rundle shaft, and the mine generally is looking very well. Spearhead Consols, we learn, continues improving. In the 116 fm. level they have a course of tin, worth 60*l.* per fm.—Improvements have also been reported at the Callington Mines, and the Camborne Consols.

At Penzance Consols they still are driving west to cut Elisha's lode. On the north lode they are raising a quantity of tinstuff. Other parts of the mine are looking very well.

West Wheal Jewel is progressively improving, and the Tolcarne lode maintains the same favourable appearance of last week.

Wheal Langmaid is represented to have improved, and, from its contiguity to Wheal Gennys, is likely to advance.

At Wheal Gennys they have intersected the lode in the 20 fm. level, where it is 6 ft. wide, worth 1 ton of lead per fm.

At South Wheal Josiah they have discovered a new lode at the surface, from 3 to 4 ft. wide; and although it has no copper, it is of a very promising character.

At Phoenix Mine, the 110 fm. level continues highly productive, the two-monthly sales giving a profit of upwards of 1000*l.*

Holmbush continues to improve. The lode in the 132 west is worth 3 tons per fm., and east 2 tons. The flap-jack lode in the 100 is looking remarkably promising. In the 120 it is anticipated great improvements will take place: 35 tons of silver-lead ore were sampled on Tuesday.

The development of the Bicton Consols is being proceeded with: every step inducing greater confidence in the undertaking. The three lead lodes have been traced at surface, nearly through the sett, and are very regular. The adit is being cleared up, and some fine stones of lead have been met with. Most of the shares taken are held by local parties. As steam-power will be required to try the mine in depth, preparations will be shortly made for the necessary erections.

The Wheal Mary Ann report is highly encouraging, especially in Barratt's shaft, which is sunk 8 fms. under the 60, where the lode is worth 22*l.* per fm.; the 60 south is worth 12*l.* per fm. The lode in the 60, north of Pollard's shaft, is worth 20*l.* per fm. The lode in the 70, south of the boundary, is worth 14*l.* per fathom.

The monthly sale (40 tons) of Kirkcudbright ores realised 10*l.* 5s. per ton.

From the Welsh mines, in the county of Cardigan, the reports are highly encouraging. At Daren the lode in each level is remarkably productive, carrying rich courses of ore in the levels generally. Cwm Eryn is looking well in the 20 fm. level, where there is a good lode, worth 14 cwt. to the fathom. At the Lisburne they are producing large returns; the mine is generally looking well, especially in the 90 west, where the lode is yielding 2 tons of ore per fathom. The next sampling will be nearly 300 tons. Court Grange is coming into good working order, leaving large reserves. The sampling in future will be gradually increased. At Cwmystwith they have recently cut a fine lode in the 36 fm. level east, yielding 3 tons of ore per fathom. At the All-y-Crib Mines a very important discovery has been made. The solid rocks of ore broken are more than 2 cwt. in a stone. At Bryntal Mine they are in capital ore; and, from present prospects, there is every appearance of continuance. At Goginan the 120 fm. level, east of Francis's shaft, is greatly improved; the lode is 4 ft. wide, and yielding 2 tons of ore per fm. Eighty tons of lead ore were sampled on the 10th inst.

At a meeting of adventurers in Carn Brea Mines, held on the 7th inst., a dividend of 2*l.* per share was declared, payable on Thursday, at the company's offices. The last report announced the mines as looking well.

At the Alfred Consols meeting, held at the mine on Tuesday, a dividend of 1*l.* per share was declared, leaving a balance in favour of the mine of upwards of 300*l.*, and it is supposed the sale of ores on Thursday will realise from 1300*l.* to 1400*l.*

At the Wellington Mines meeting, held at the mine on Wednesday (the report of which has not yet been received, but will appear in our next), a dividend of 1*l.* per share was declared, and the mine was represented as being in a most improving state.

At the Wheal Comfort meeting, the accounts for April, May, June, and July, were presented, showing—Balance from last account, 466*l.* 1s. 5d.; ore-sold (less dues), 1306*l.* 15s. 9d.—1772*l.* 17s. 2d.—Cost and merchants' bills, 1284*l.* 18s. 1d.; leaving balance in favour of adventurers, 487*l.* 19s. 1d.

At the Warleggan Consols meeting the accounts showed a balance of 165*l.* 18s. 1d. in favour of the company. The agents' reports were deemed highly satisfactory, and before the next meeting returns will be made to meet the current expenses of the mine.

At the Herodsfoot meeting the accounts showed a balance in favour of adventurers of 581*l.* 17s. 10d., and a balance of assets over liabilities of 197*l.* 19s. 1d., the profits of the three months being 115*l.* 6s. 4d. A favourable report was presented by the manager, in which he expresses a hope that the returns will in future be increased, without any addition to the monthly cost.

At Wheal Fortescue meeting the accounts showed a balance, including arrears of calls, of 17*l.* 18s. 7d. against the adventurers. For the purpose of raising additional capital, the shares were increased to 2048*l.* at 5*l.* per share, to be paid by instalments, as the money may be required.

At the Trethvey meeting, the statement of accounts were presented, showing—By calls, 904*l.*—Payment for engine, 250*l.*; cost-sheet for June and July, 229*l.* 5s.; call on 60 free shares, 120*l.*; balance, 91*l.* 14s. 11d.; due on unpaid calls, 120*l.* Two calls, of 1*l.* per share each, were made. The committee of management were requested to arrange with Mr. E. Hopkins, F.G.S., occasionally to visit the mine.

At the Kingsett and Bedford meeting, the accounts showed—Balance in hand last account, 52*l.* 7s.; arrears received, 202*l.*—254*l.* 7s.—Cost for June, 142*l.* 10s. 1d.; July, 108*l.* 14s. 2d.—Leaving balance in hand, 31*l.* 2s. 9d.; add, arrears of calls still due, including 8*l.* 10s. on forfeited shares, 49*l.* 15s.—52*l.* 17s. 9d.—Liabilities due from company, 80*l.*; estimated cost sheet for August and Sept., 200*l.*—280*l.* A call of 5s. per share was made.

At the Peter Tavy and Mary Tavy meeting, the accounts showed—Cost for machinery and labour since the 10th July, 260*l.* 17s. 2d.—Balance in hand, 1330*l.* 17s. 8d.—Reports were received from the agent, Capt. Lean, stating that the water was in fork in the 20 fm. level.

At the Carbona meeting, the accounts showed a balance of 172*l.* 0s. 5d. due from the mine. The agent's report is very encouraging, and the prospects generally tend to the belief of this becoming a productive mine.

A considerable degree of excitement and surprise has been produced by the award given in the arbitration case of the South and West Caradon Mines. An action was brought against these mines, and tried at the County Assizes last year, by the Duchy of Cornwall and other landowners, for injury done to some lands on the banks of a small river, which the water flowing from the mines is stated to have injured, when the jury gave no verdict. Since then, some of the adventurers, being more desirous of an amicable settlement, and to be released from the anxiety which a law suit naturally induces, agreed to an arbitration. The award has been made known during the week, giving to the lords 5800*l.*, with expenses attending the arbitration of 600*l.*, not, as might be supposed, for the fee simple of the land (the amount awarded being commensurate with its value), but merely for the injury done, leaving the soil still vested in the original owner. Comment on such statement of facts is superfluous. We are not going to question the capabilities or the competency of the arbitrators in the matter, but we will



Foreign gold, in bars .... per oz.	£3 17 9	New dollars..... per oz.	£0 4 10½
„ Portugal pieces....	0 0 0	Silver in bars (standard) ....	0 5 0

**BRITISH MINES.**

1860s.	Company	Paied.	Price.
1000	Abercrombie (silver-lead), South Wales	9	—
1024	Alfred Consols (copper), H. Cornwall	8	30
1248	Ally-Crib (silver-lead), Talybont, Cardiganshire	9	14
1024	Balleswidden (tin), St. Just, Cornwall	9	14
128	Balcon Consols (tin), Uny Lelant, Cornwall	43	20
903	Baristown (lead), Carrick, Ireland	58	—
3650	Barddon (silver-lead), Cornwall	3	—
4080	Bedford United (copper), Tavistock, Devon	22	4 44
127	Bird's Head (tin), Hartmoor, Devon	103	71 3
1500	Bishopstone (silver-lead), Cardiff, Glam.	13	10
5000	Black Craig (lead), Kirkcubrightshire	5	—
5000	Blisenavon (iron), South Wales	50	122
1024	Bodmin Consols (lead), Wadebridge, Cornwall	3	3
5000	Bodmin Moor Consols (tin and copper), Bodmin, Cornwall	1	8
60	Bosora (tin), St. Just, Cornwall	34	10 12
1024	Bolton (tin and copper), St. Just, Cornwall	183	150
2030	Bottle Hill (tin and copper), St. Just, Cornwall	2	2
1500	Brifdow Wheel Augusta (lead), Brifdow, Devon	4	—
10000	British Iron, New, regis. (iron), South Wales	12	8
—	ditto ditto, scrip	10	10
2400	Bryn-Arian (lead), Cardiganshire	3	24
107	Budnick Consols (tin), Penzance, Cornwall	523	10 11 11
127	Burdon (tin), Menheniot, Cornwall	12	44 5
3000	Bwch Consols (copper), Callington, Cornwall	26	67 14
1000	Callington (lead and copper), Callington, Cornwall	7	7 8
1000	Camborne Consols (copper), Camborne, Cornwall	7	—
20000	Cameron's Steam Coal (coal), Swansea, Wales	7	—
1168	Caradon Great Cons. Mines (copper), Linkinhorne, Corn.	223	10
256	Caradon United (tin and copper), St. Cleer, Cornwall	24	5 8
1536	Cardwell (copper and lead), St. Ive, Cornwall	3	12 11
127	Cardwell (tin and copper), St. Ive, Cornwall	15	10
1000	Carn Brea (copper and tin), Illogan, Cornwall	31	117 125
3000	Carthew Consols (cop. & lead), near Wadebridge, Cornwall	31	—
132	Carvannall (copper), Gwennap, Cornwall	313	60 80
300	Cefn Bruno (lead), Cardiganshire	4	9
113	Charlestown (tin and copper), St. Austle, Cornwall	230	—
500	Chesbourn (lead), Callington, Cornwall	54	44
1000	Chesbourn (copper), Gwennap, Cornwall	45	110
256	Codrour (copper and tin), Callisto, Cornwall	32	115 120
2560	Cook's Kitchen (copper and tin), Illogan, Cornwall	14	7 11
1000	Coombe Valley Quarry (slate), St. Ginnis, Cornwall	5	2
1000	Copper Bottom (copper), Crowan, Cornwall	5	7
900	Cort Grange (silver-lead), Cardiganshire	9	10
211	Cradock Moor (copper), St. Cleer, Cornwall	27	8
127	Crantock (copper), Camborne	2	10
1000	Cwn Erfin (lead), Cardiganshire	60	31 34
128	Cwynystwith (lead), Cardiganshire	2	8 11
1000	Daren (silver-lead), Cardiganshire	10	3
1000	Derwent (silver-lead), Durham	10	3
1040	Devon and Courtenay Consols (copper), near Tavistock	114	3
1024	Devon Great Consols (copper), near Tavistock	1	220 25 30
1000	Dhurode (copper), Ireland	2	5
1000	Dunstan (copper), Camborne	30	20
2560	Duke Walls (tin and copper), Calstock, Cornwall	63	24 3
10000	Durham County Coal (coal), Durham	41	10
3000	Dyffryn (lead), North Wales	10	10
1024	East Balleswidden (tin), Saneered, Cornwall	3	3
2560	East Birch Tor (tin), North Bovey, near Ashburton	3	3
1024	East Buller (copper), near Redruth, Cornwall	2	34
1000	East Croy (copper), Redruth, Cornwall	1	24
2048	East Crowndale (tin), Tavistock	7	3 4
150	East Daren (lead), Cardiganshire	133	13
256	East Godolphin (copper), Crowan, Cornwall	15	60 62
4000	East Gunnis Lake Junction (copper), Gunnis Lake	5	200
128	East Pool (tin and copper), Pool, Illogan, Cornwall	15	—
256	East Seton and Wheel Maude, near Redruth, Cornwall	—	44
9000	East Tamar Consols (silver-lead), Beer Ferris, Devon	12	12 14
1000	East Treoscil (tin), Lanivet, near Bodmin, Cornwall	14	8
128	East Tywarthly (copper), St. Agnes, Cornwall	1	94
128	East Wheal Ager (copper), St. Cleer, Cornwall	—	—
94	East Wheal Crofty (copper), Illogan, Cornwall	125	110
128	East Wheal Rose (silver-lead), Newlyn, Cornwall	50	480 525
1024	Esqair Lioe (lead), Llanfihangel-y-Crothyn, Cardigan	2	3 34
1024	Exeter Brea (copper), St. Mary Tavy, Devon	11	8 10
248	Fowey Consols (copper), Calstock, Cornwall	40	30
1024	Freidd Llwydd Mines (lead), Wales	13	34
256	Garras (lead), near Truro	41	23
4000	General Mining Company for Ireland (copper), Ireland	18	4
150	Goginan (lead), Cardiganshire	5	200
256	Gonaveus (copper), St. Cleer, Cornwall	444	16
950	Georgis Consols (tin), St. Ive's, Cornwall	2	13
256	Georgis Consols (copper), St. Ive's, Cornwall	1000	254
90	Great Consols (copper), Gwennap, Cornwall	20	85 90
512	Great Wheal Badden (tin and silver-lead), Kea, Cornwall	244	20
6000	Grova Slate Company, Camelford, Cornwall	5	5
1026	Gustavus Mines (copper), Camborne	3	21 3
512	Hawkes Point (copper), Uny Lelant, Cornwall	5	15
1024	Hawkestar (copper), Calstock, Cornwall	5	15
2048	Heligston Down Consols (copper), Calstock, Cornwall	265	24 3
150	Hennock (silver-lead), Hennock, near Exeter, Devon	16	14
512	Herodsfoot (lead), near Liskeard	124	12
0000	Hibernian (copper), Ireland	23	20 25
1000	Holmbush (lead and copper), Callington	38	3
1000	Keswick (lead), Fortinace, near Keswick	3	2 3
1024	King and Brea (copper), St. Mary Tavy, Devon	34	3
704	Kirkcubrightshire (lead), Kirkcubrightshire, Scotland	41	10
2018	Lanherose Wheal Maria (copper and tin), Lamerton	10	4
256	Lanarth Consols (copper), Gwennap, Cornwall	1	—
128	Lelant Consols (tin), Uny Lelant, Cornwall	53	25
150	Levant (copper and tin), St. Just, Cornwall	—	175
1000	Lewis (tin and copper), St. Erth, Cornwall	17	174 20
100	Lisbarn (lead), Cardiganshire	75	600
1024	Liverridge (lead), Cornwall	9	9 10
5000	Llynvi Iron (iron), North Wales	50	—
3000	Mary Valley (copper), Caradon, Cornwall	10	8 1
5000	Mendip Hills (lead), near Bristol	34	2 24
128	Metha (lead) Newlyn, Cornwall	34	—
256	Mill Pool, Truro	—	84
256	Mineral Court (tin), St. Stephens, near St. Austle	134	30 35
1000	Mining and dr. Amman and S. J. Waterford, Ireland	7	41 8
1024	Modithman & Marrabro's (copper & lead), Glamorgan	41	34
1024	Montgomery (lead and copper), Montgomeryshire	6	111 12
200	Nanteos (lead), Cardiganshire	34	—
3000	Nant-y-Car (copper), near Rhayader, Breconshire	—	5
1024	New East Crowndale (copper and tin), Tavistock	2	2
1024	North Wheal Bassett (copper and tin), Illogan, Cornwall	—	15 30
1024	North Buller (copper), Redruth, Cornwall	2	5
128	North Croy (copper), Redruth, Cornwall	21	—
100	North Pool (copper and tin), Pool, Cornwall	45	300 400 410
140	North Roskear (copper), Camborne, Cornwall	51	160
262	North Wheal Lelsure, Penzance, Cornwall	14	12
512	North Wheal Vor (tin), Breage, near Helston, Cornwall	—	5
128	Par Consols (copper), St. Blazey, Cornwall	558	650
026	Pendarves Consols (copper), Camborne, Cornwall	2	6
1000	Pendennis and Penryn Consols (copper), Camborne, Cornwall	4	54 6
1000	Pennant and Craigwen (lead & copper), Camborne, Cornwall	3	5 54
0048	Pentire Glaze, United (silver-lead), St. Mervin, Cornwall	3	5
000	Penybanc and Ercloyd (lead), Cardiganshire	4	6
024	Penzance Consols (tin), Saneered, Cornwall	22 34	21
000	Peter Tavy and Mary Tavy (copper), Tavistock, Devon	21	5 54
512	Plymouth Wheal Teolant (tin), Plymouth, Devonshire	61	6
000	Polbarn (tin), St. Agnes, Cornwall	15	—
111	Princes Freeland (copper), Cornwall	10	150
000	Providence Mines (tin), Uny Lelant, Cornwall	10	10
000	Rhoswydoff and Bacheiddoff (lead), North Wales	50	12
000	Rhymney Iron (iron), Rhymney, South Wales	7	3
000	Roche Rock (tin), Roche, near St. Austle	1	1
000	Rocks Mine (tin), Roche, near St. Austle	5	6 7
048	Runnar's Consols (copper), Carnarvonshire, Wales	21	5 54
024	Snowdon (copper), Carnarvonshire, Wales	3	5
000	South Balleswidden (tin), St. Just, Cornwall	1	—
000	South Tamar (silver-lead), Beer Ferris, Devon	1	24 3
128	South Caradon (copper), St. Cleer, Cornwall	5	260
000	South Carn Brea (copper), Illogan, Cornwall	10	6 10 12
100	South Dolcoath (copper), Illogan, Cornwall	6	3 4
000	South Friendship Wheal Avon (copper & tin), Devonshire	30	28 30
256	South Lelant (lead), Devon	123	194
000	South Plain Wood (copper), Ashburton, Devon	15	40
000	South Speed (copper and tin), Uny Lelant, Cornwall	15	30
000	South Tolgus (copper), Redruth, Cornwall	16	140 145
000	South Trelawny (lead), near Liskeard, Cornwall	283	8 8
000	South Wales Mining Company (lead), South Wales	1	1
000	South Wheal Bassett (copper), Illogan, Cornwall	104	325 330
124	South Wheal Joseph (copper), Illogan, Cornwall	160	5428
000	South Wheal Josiah (copper), Calstock, Cornwall	2	34 4
000	Southern and Western, Irish (copper), Cork, Ireland	20	—
000	Spearne Moor (copper), St. Just, Cornwall	30	40
128	Spearne Consols (tin), St. Just, Cornwall	10	100
000	St. Aubyn and Grylla (copper and tin), Breage, Corn.	21	84 9
94	St. Ives Consols (tin), St. Ives, Cornwall	—	80
000	St. Michael Fenkivel (cop. & tin), Chacewater, Cornwall	5	104
000	St. Minnow Consols (copper), Illogan, Cornwall	1	—
000	Taney Park (copper), Camborne, Cornwall	104	30 21
000	Tannar Consols (silver-lead), near Tavistock, Devon	2	3 44
000	Tary Consols (copper), near Tavistock	8	24 34
000	Tincroft (copper and tin), near Pool, Cornwall	7	124 134
28	Tokenbury (copper), St. Ives, near Liskeard	74	8
40	Tolcarne (tin and copper), Camborne, Cornwall	8	124
28	Trannack United Mines (tin and copper), Helston, Corn.	1	34 8
48	Trebell (tin), Cornwall	14	—
000	Tregear Consols (antimony and silver-lead), St. Kew	1	2 24
54	Tregodren (silver-lead), near Bodmin, Cornwall	10	7 10
000	Trehane (silver-lead), Menheniot	1	224
000	Treleigh Consols (copper), Redruth	6	24 3
24	Trelusback, Stithians, Cornwall	—	5



**NOTICES TO CORRESPONDENTS.**

•• We must insist upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

**DEVON GREAT CONSOLID MINING COMPANY.**—The able and interesting account of these valuable mines, by Mr. J. B. Murchison, having been for some time out of print, and that gentleman having consented to revise it up to this time for re-publication; we intend, in an early Number, to present it again to our readers.

• W. T. L. (Aberdare).—The third part of Mr. Bruff's work on Surveying, &c. is not published, or likely to be at present. The book published by Mr. Weale, alluded to, must be "Gardiner's Railway Mensuration," about a year and a half ago.

• J. C.—The mine was necessarily omitted from our Share List, with several others. No transactions having taken place, we conceived no inconvenience could arise. The other request will be answered in due season.

**TAS NOVA MORTUÆ.**—We shall give detailed description of this new mode of propulsion, with diagrams, in our next Journal.

• A. B. (Callington).—We And, on inquiry, that the Abergwesinn Mine is idle,—there being no funds in hand, nor any prospect of resuming operations.

• G. C. B. (Edgborough).—Nothing decisive has as yet taken place with regard to the affairs of the "Company of Copper Miners in England." As the time is now arriving in which, in all probability, the securities will be required to come forward, we may expect, in a few days, that some definite steps towards an arrangement with the mortgagees and debenture holders—*in fact*, comprising all the various interests—will be mooted; and we trust that past experience will have shown the various parties the necessity of combination, to ensure success.

• N. B.—The Bolanos Mining property was not sold to a new company; an attempt to form a new proprietary, for the purpose of working the Cerro del Boto Mines, was made; but, owing to the opposition of the constituted authorities, and the original owners, who are now working them on their own account. The larger number of those who took up the newly-created shares had been proprietors in the old Bolanos Company for many years; it is not, therefore, likely, as it is too generally imagined, that they would have sanctioned a new company being established on the wreck of the old one. We believe that a final settlement of the Bolanos affairs has yet to be made.

• A Shareholder. (York) must write to the secretary—he will not refuse the information on proper application.

• E. S. (Wigan).—The price of coals quoted by us is the *market* price. City dues and all charges being deducted from the freight, with the exception of  $\frac{1}{4}$ th of a penny per ton for metage to the coal merchant who retails them to his customers according to the price he may fix, which varies considerably.

• J. S. (Pimlico).—We were informed, yesterday, that although the shares in the Great Northern were quoted at 11*l*, yet there were no *bona fide* buyers at that price. Although the Eastern Counties may, from a variety of causes, be at present in a depressed condition, yet we consider its prospects are as favourable as those of any other line. The Great Northern has given a guarantee to pay 6 per cent.—this previous to the original shareholders receiving anything. We shall be glad to see that in six months their shares are really of the value at which they are now quoted.

• An Adventurer. (Enfield).—The reports regularly appear in the Journal, as they are received from the mine agent.

• W. R. (Jersey).—The steam plough is the invention of Lord Willoughby D'Eresby, who is keeping his attention to the subject. The machinery consists of a locomotive-engine, designed by Mr. Gooch, weighing 34 tons, and of 36-horse power. This engine moves across the centre of the field on a light portable railway; and on either side plunges advance and recede at right angles to the railway and engine. Each plough consists of four ordinary and four subsoil ploughs, fixed in a frame, and is directed by a man standing in a small platform moving with the plough, who guides it by means of a handle attached to a wheel running on the land. As the plough strikes the ground the engine advances towards it, and turns over and subsoils four furrows, the other plough on the opposite side recedes, so as to be ready to begin to work as soon as the furrows on the other side are completed. When receding, the subsoils are raised so as to clear the ground, the implement running on two wheels, which are raised out of the way whilst the plough is at work. On the completion of the four furrows on both sides, the engine and side frames advance 3 feet. The ploughs are attached to an endless chain, 150 yards in length. They can be detached at pleasure, or shewn from the engine, and the chain may be traversed at the rate of five miles per hour. Provision is made for the ploughs striking against any impediment, and the chains can be tightened, by which the length of each run may be varied 40 feet, to suit irregularly shaped fields. The chain is made in 33 feet lengths, so that if any further alteration is necessary, one length can be added, or taken out, as required. An engine of this power has force enough to work more than four blades, which may, therefore, be increased if deemed advisable. *Low Wigan.*—D'O'Neale's machine, which is now doing the work of 16 ploughs with 16 men and 32 horses. In parts of the country where they yoke three or four horses to one plough, and require a driver as well as a ploughman, the saving must be still greater. Eight men are required to attend the steam plough, and one horse to supply water for the engine. The cost of coals is estimated at 5*s*. a day in that part of the country, where coal is very dear, and there is also to be reckoned the interest and the wear and tear of the machinery, costing about 500*l*.

• A.—At the close of a letter from Mr. David Massey, which appeared in your paper on the 14th inst., under the following paragraph:—"I perceive, in your Notices to Correspondents, that the fictitious report of Mr. Blackwell's presidency proceeded from the *Gatehead Observer*. For my part, I cannot see anything amusing in such misrepresentations. It would have been more to the Editor's credit had he shown, by a copy

the newspaper, and that but one of the expressions was clearly "in the presence of language, that the chairman was the Government Commissioner." I glance over your Journal weekly, but neither the paragraph, nor the notice referred to by Mr. Musket, caught my eye; and it was not until now, that I had the slightest suspicion that the *Observer* was held responsible for the misapprehending as to Mr. Blackwell. On turning to the report of the meeting of June 4, given in the *Observer* of June 8, I find these words:—"The attendance of John Fife, who was to have taken the motion of being constituted a permanent engagement, was rejected by the motion of Dr. George Fife, seconded by Matthias Dunn, that John Blackwell, Esq., be called upon to provide. And the report closes as follows:—"Thanks were then voted to the ~~worthy~~ *committee* in the chair, and the meeting broke up." There are few gentlemen more generally known in the north of England than Mr. Blackwell, one of the proprietors of the *Newcastle Courier*; and when, a few weeks after the meeting was held, I saw, by your or some other paper that he had been confounded with the Government Commissioner, I noticed that it was as an amusing blunder. It was a "petitum report" ever "proceeded from the *Gateshead Observer*" is untrue; and as I am quite as incompetent as Mr. Musket to "see anything amusing in misrepresentations," I will thank you to set me right with your readers by inserting this letter, and oblige—THE EDITOR OF THE OBSERVER: *Gateshead*, Sept. 9.

•• It is particularly regretted that all communications may be addressed—

*Mining Journal Office,*  
26, FLEET-STREET, LONDON.  
And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

---

**THE MINING JOURNAL**  
*Railway and Commercial Gazette.*

---

LONDON, SEPTEMBER 14, 1850.

---

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news-agents, at the Royal Exchange, and other parts of London.

To our mind, there has not for a long time past a more deplorable misadventure overtaken the British people than the recent failure of the attempt to secure a regular steam communication with our great Australasian empire. The route which, as most of our readers know, was most in favour with the Government, as well as with the colonists and in the principal commercial circles, was the eastern voyage by Singapore to New Zealand. In all the internecine contests as to the best steam path into the depths of the Pacific, although this was the longest, the most expensive, and the most inaccessible to merchandise, as well as to that description of passenger traffic which in any case we were likely to have with Australia, it was the general favourite, and carried off a higher class of honours than either of its great competitors. The settlers in the Australian islands preferred it, because it gave them a regular and assured communication with that glorious region in the east, in all times so filled with spices, silks, and gold, for which they hoped to exchange the harvests and the more useful metals of their teeming virgin soil. The Government preferred it, because nationally we have a greater stake in the old empire of the Moguls, and in about half a dozen supplementary empires stretching from the Persian Gulf to the wall of China, than we have in a single empire, yet in its cradle, and in many things needing our lullaby and our nursing lap; the merchants liked it best, because they are factors in all the great cities of the east; and as they are already rich by the connection, they hope to become more so, by facilitating their communication with it. The Singapore route, therefore, to Australia has obtained a more general patronage than that which passes over the narrow ligature connecting the two American continents, simply on this account, that in India there is a more magnificent accumulation both of nations and of wealth, than

could be met with by any westerly course into the Pacific Ocean. But as it appears, by the overreaching capidity, or by the pharisaical stiffness of the great company in Leadenhall-street, this cannot be made an Australian mail tract for at least two years to come, this failure to carry out a postal communication in the direction of the rising sun, has driven us to follow the course, and to seek the shelter, of his setting beams.

Instead of reaching our colonial brethren through Alexandria and Aden, we are about to put ourselves in communication with them through Chagres and Panama. Although by this route into the Great Northern Ocean we miss India, with her many thrones, we familiarise ourselves

... ..

100

TO  
GENT  
from the  
great in  
work  
ontain  
ship  
power  
an al  
be se  
quali  
hands  
there  
an the  
to the  
sation  
ist, an  
what is  
It is,  
proprie  
and is  
Admir  
few wh  
of the  
steam  
an und  
both  
called  
contrit  
It is  
Admir  
to who  
lism a  
village  
to wh  
fetter  
fair fl  
the ju  
Or,  
coal m  
frictio  
combi  
tors of  
his or  
all pu  
the ly  
certifi  
a cas  
both  
up to  
which  
I ha  
shipp  
and fi  
ties a  
Weat  
by an  
the al  
to the  
to em  
distr  
both  
same  
requi  
navy  
But  
pract  
perio  
to wh  
for m  
mira  
coals  
given  
purch  
occas  
the  
adapt  
raisin  
but,  
any  
even  
a cas  
quire  
I f  
now  
ma  
this  
tere  
P  
tion  
the  
min  
most  
are  
requ  
wh  
The  
ven  
mat  
eith  
an  
soc  
ten  
cia  
pre  
not  
me  
diti  
of  
he  
M.  
rain  
Brit  
me  
high  
Gen  
un  
adj  
fita  
just  
ye  
for  
6.1  
lan  
am  
on  
50  
th  
na  
of  
ta  
m  
pl  
pa  
of  
Ra  
re  
th  
pe  
a  
up



## TO THE COAL PROPRIETORS OF NORTH WALES AND LANCASHIRE.

GENTLEMEN,—Many of you who are interested in the production and shipment of coal from the port of Liverpool or Birkenhead, have, no doubt, as well as myself, read with great interest Mr. W. Laird's valuable and highly interesting work on the Coal Trade—a work which must have cost him much labour and expense in compiling the statistics contained therein, and in collecting which he has conferred a great boon on the coal proprietors of North Wales and the Lancashire district, as well as on the merchants and shipowners, not only of the Mersey, but of every nation, by opening clearly to their view an almost entirely new trade, which, in the course of a short period, will, I apprehend, be second in importance and extent only to the cotton trade of this port, if due and requisite facilities on both sides of the Mersey be given for efficiently carrying out the ideas therein suggested by him. But there is one point connected with the trade which at your hands requires a most searching inquiry and a strict attention, and that, too, promptly, on the part of the coal proprietors, more particularly in this district, who send their coals to the shores of the Mersey for shipment, and which I take this means of calling your attention to. I allude to the fact of certain coals only being entered upon the Admiralty list, and of these very few indeed, I believe, if any, of the coals produced from the mines of Lancashire are admitted upon that list as approved of by the Admiralty, or for which what is termed an Admiralty certificate can be given.

It is, therefore, to this very subject I would wish to call the earliest attention of all coal proprietors in this district. The case is one of great injustice to the majority of them, and is a gross act of unparliamentary patronage of the privileged parties by the Board of Admiralty, who are the sole cause of this injustice, by granting certificates to the favoured few who have possessed, or been able to procure, sufficient influence to get the produce of their mines placed upon the list of coals which are approved of for the use of the steamers belonging to the navy, and for other Government uses, thereby creating to the lucky proprietor of such a colliery a monopoly, and thus, enriching such proprietors by an undue preference, which preference has been obtained and monopoly created by experiments made by the Government at the national expense, from the public funds, granted to the navy in the navy estimates, to which all coal proprietors in the kingdom contribute their proportionate share in the shape of taxation.

It is high time that this system of abuse of the privilege and powers of the Board of Admiralty were done away with, and immediate steps taken to rescind all such privileges, to whoever they may have been granted, and thus do away with this system of favouritism and patronage, and the creation thereby of so unjustifiable a monopoly to the privileged few only. I would respectfully suggest that all past certificates should be recalled and cancelled by the Board of Admiralty, and the trade left open to a fair and unfettered competition, and that every coal proprietor would have an open competition—a fair field for his energy, and be able to reap that proportion of the trade his produce and the judicious outlay of his capital entitles him to.

On the other hand, if such certificates are to be obtained, let the proprietors of the coal mines throughout this district bestir themselves actively in this matter, and claim from the Board of Admiralty a certain fixed standard of quality of coal, and let any coal coming up to such standard be admissible upon the list; and then give to the proprietors of such coal, on application for the same, the privilege of granting a certificate that his or their coal is admitted upon the list of coal approved of by the Board of Admiralty for all purposes of raising steam, either in marine or land engines, and give such proprietors the authority to grant certificates with their coals to this effect, stating thereon the analysis required by the Board of Admiralty, and the analysis of the coal for which the certificate is granted, and enforce heavy penalties for giving a false certificate in any particular, or being convicted of fraud in giving such certificate for coal that will not come up to the standard fixed upon, or for coals coming from a different mine from that for which the certificate purports to be granted.

I have reason to believe that certificates have been granted for thousands of tons of coal shipped from the Mersey, obtained from collieries never entitled to grant such certificate, and from mines the produce of which have never been tested or tried in any way by parties authorised by the Admiralty to sanction their approval.

There are some collieries in North Wales, situated on the property of the Marquis of Westminster, the produce of which mines are admitted upon the list of the Admiralty, and through whose interest and influence this was achieved, and privileges granted to the already wealthy owners of such a property, and yet repeatedly refused on application to other parties equally, and in some instances better, entitled, it is not my place now to enter into; but it is a well-known fact, that other proprietors of collieries in the same district, whose mines produce coals the quality of which would bear every test, as proved both by analysis and use, for steam purposes, have been unable to obtain or to have the same certificates granted to them, although they have repeatedly offered to pay all expenses of such trials for approval to the satisfaction of the Admiralty, and to send any required quantity of coals to the Board of Admiralty for trial, either in steamers in the navy or in the Government works on shore.

But to show the fallacy and absurdity of this certificate system. It is a very common practice for parties to buy the best coals they can procure, and that they know from experience are well adapted in every respect for steam purposes, and to export them to ports to which coals on the Admiralty list have been shipped, and certificates sent therewith for former cargoes, and which cargoes have been sold on production abroad of an Admiralty certificate, and consumed; but the certificates have not been given up when the coals for which they were sent were sold, nor required by the purchaser abroad to be given up, a mere exhibition of a certificate being deemed sufficiently satisfactory to the purchaser. This said certificate having served the seller's purpose, it is put by for another occasion, or may be sold to serve other ships which are not so fortunate as to possess one, and is thus handed over and over again for coals in store, which may be much better adapted, and worth intrinsically 20 or 30 per cent. more in value, in every respect, for raising steam than the coals for which such Admiralty certificate was originally granted; but, unfortunately, the proprietors of such colliery from whence they come could not by any means or influence induce the Admiralty to give them a fair and impartial trial, not even at the expense of the proprietors, so as to enable them to obtain permission to grant a certificate that their coals were well adapted for, and up to the standard quality required by the steam navy and other Government service.

I find I have already trespassed too much upon your space, but from the great interest now excited on this subject, I hope you will spare room for the admission of these remarks in your paper, as it is only by the powerful aid of the public press that abuses of this kind can be swept away, by thus making them public, and patent to all parties interested.—J. Woods: South-West Colliery Company Office, Birkenhead, Sept. 7.

**PATENT LAW REFORM LEAGUE.**—An association is now in course of formation under this title, having for its object the promotion of the amendment of the Patent Laws, which it is needless to remind our readers, as at present administered, are found to operate to the prejudice of all inventors, and in the most oppressive manner against inventors of small pecuniary means (and they are the majority), principally on account of the great expense attending the obtaining and securing patents for the United Kingdom. This association has requested the co-operation of our correspondent, Mr. Campin, the patent agent, who has been so long agitating this question, which he has readily accorded. The support of several gentlemen of influence is promised; and we trust inventors, whether mechanics or gentlemen, will not be found wanting in the matter, for all are interested—in fact, it is difficult to say who is not interested, either directly or indirectly, in this subject, when it is considered that this is an age of steam-engines, power looms, electric telegraphs, and that even our social existence is every day improved by some new contrivance, or design, tending to our greater comfort or convenience—all produced by the neglected class of inventors. On the eve of the Great Exhibition of 1851, which is expressly designed to encourage the national industry, the powers that be cannot surely overlook the claims of inventors, more especially as the Government has so recently admitted their validity. We shall be happy to give additional information to our readers; and any further particulars may be learnt of Mr. Campin, at the Patent-office, Strand.

We understand that a meeting of landowners and others is appointed to be held at the Town Hall, in Glastonbury, on Monday next—W. Pinney, Esq., M.P., in the chair—to take into consideration the propriety of constructing a railway from that town to Highbridge, a distance of 12 miles, there to join the Bristol and Exeter Railway, and to adopt Messrs. Motley and Clarke's patent mode of constructing what is termed the upper works, which plan has been highly approved by many engineers and others, among whom may be named Gen. Sir C. Pasley, late inspector of railways; its economy is such that it is expected that the twelve miles will be effected, including bridges, stations, &c., under 24,000*l.*; if so, considering the population of Wells, Glastonbury, and adjacent towns, to amount to nearly 50,000, having a direct communication with Bristol, &c., it is reasonable to conclude that it will be a very profitable undertaking.

**GOVERNMENT TAXES ON RAILWAY COMPANIES.**—It appears from a return just issued that the amount of income-tax paid by railway companies for the year ending the 5th of April, 1849, was for England and Wales, 168,886*l.*, and for Scotland, 16,036*l.*—total, 184,922*l.* This would represent a net income of 6,164,039*l.* for the year. The passenger-tax paid by railway companies for the year ending the 31st December, 1849, amounted to 218,899*l.* 18*s.* 10*d.* in England, and to 19,009*l.* 15*s.* in Scotland; together, to 237,909*l.* 18*s.* 10*d.* Adding the income-tax and the passenger duty together, they make 422,890*l.* as the amount paid by the railway companies in Great Britain to the Government in one year. It is probable, from the increased traffic on the railways in the present year, that the Government taxes on railway property will amount to about 500,000*l.* for the year 1850.

**THE NEW ACT TO FACILITATE THE ABANDONMENT OF RAILWAYS.**—The new Act to facilitate the abandonment of railways received the Royal Assent on the 14th ult., when it came into force. Its object is to facilitate the dissolution of railway companies, as also to enable companies to abandon railways or certain parts where they cannot be carried on with advantage either to the promoters or to the public. It is provided that railway companies may make application to the Commissioners of Railways to be allowed to abandon their undertaking. "That it shall be lawful for the directors of any such railway company at any time to call a meeting of the shareholders thereof for the purpose of determining whether such application shall be made to the Commissioners of Railways, and so from time to time as they shall see fit." Shareholders may require such meetings to be called. When an application is entertained by the commissioners, opportunities are to be afforded to parties who may consider themselves aggrieved, to state their objections. The commissioners, by their warrant, may authorise the abandonment of a railway or part thereof. Compensation may be made to parties who are injured by the abandonment. Where a railway is wholly abandoned its affairs may be settled under the Winding-up Act. There are 40 sections in the Act, and notices of proceedings adopted under it are to be laid before Parliament.

\* See Mining Journal of the 17th August.

## TREATMENT OF COPPER ORES.

By JOHN MITCHELL, Esq., F.C.S., author of *A Manual of Practical Assaying*, &c., &c.

Metallic copper has been employed in considerable quantities from the remotest antiquity. Instruments of warfare, &c., were manufactured by the ancients from an alloy of copper with tin. On the introduction of iron and steel, copper ceased to be used for these purposes; but numerous other uses were found, making the consumption of copper very considerable. In the present day it is most extensively employed, and bids fair to be yet more so, more particularly if any method can be found by which it can be manufactured at a cheaper rate. Many attempts have been made to produce this desirable result, as shown by the numerous patents which have been taken out within these last few years; but as yet there are very few, if any, of the patents, separately, that are adapted to a very decided improvement in this branch of manufacture. In the following papers on this subject, all the patents which appear to possess merit will be carefully examined, and their respective advantages and disadvantages pointed out.

Pure copper has a peculiar bright reddish brown colour, and possesses much lustre when polished. It imparts to the hands, especially when they are hot, a very disagreeable smell, which can be at once recognised. It is one of the most malleable metals, and can be reduced to very thin leaves, and drawn into very fine wire. When fused, and allowed to cool slowly, it crystallises, assuming the cubical and octohedral forms. Copper, in a very finely divided state, can be welded (so to speak) like platinum. Osann has taken advantage of this property to obtain impressions of medals, &c. In order to effect this, finely-pulverised oxide of copper is reduced by hydrogen gas; and the finest portion of the metal thus prepared is placed on the medal to be copied, and which is surrounded by a moveable ring. The metallic powder is then carefully pressed by means of a suitable piston, and the compression completed by a few blows with a hammer. By this method of operating, the impression acquires a completely solid state, and can be removed from the medal; it is then heated to redness in a current of hydrogen gas, and allowed to cool in the same medium. During the heating, the impression contracts very much in all directions, but without losing any of its sharpness, and possesses every appearance of fused copper. According to Scheerer and Marchand, fused copper, free from vesicles, has a specific gravity equal to 8.921; the same copper, drawn into large wires, 8.937 to 8.932, and into small, 8.952.

**The Ores of Copper.**—The ores of copper are very numerous, and may be classed as follows:—

Metallic minerals .....	Native copper.
	Sub-oxide (ruby copper).
Oxygenated minerals .....	Oxide.
	Oxide-chloride.
	Chloride.
	Copper pyrites.
	Peacock copper.
	Antimonial sulphuret.
	Stanniferous sulphuret.
	Bismuthic sulphuret.
	Argentiferous sulphuret.
Sulphuretted and seleniuretted minerals .....	Multiple sulphurets, or grey copper.
	Sulphates.
	Seleniuret.
	Euchairite (seleniuret of copper and silver).
	Phosphates.
	Arsenites.
	Arsenates.
Phosphuretted and arseniuretted ores .....	
Siliceous ores .....	The hydrated silicates.
	Anhydrous carbonate.
Ores with carbonic acid .....	Green carbonate.
	Blue carbonate.
Mineral with metallic acid .....	Plumbiferous chromate, or vanquelinite.

**Native Copper** is found crystallised in octohedral and other forms, derived from the cube; but more often it occurs in amorphous masses, fragments, thin plates, or leaves and grains. It is nearly always accompanied by the red oxide, carbonate, and sulphuret. Of late years, many large deposits of this valuable metal in the native state have been found. In the Trenance Mine, some two years since, a large deposit occurred. The author has in his possession a portion of it; it is exceedingly pure. It has also been found in other places in Cornwall, in Siberia, and the Brazils. The vicinity of Lake Superior, however, is one of the most extraordinary regions in the world for its native copper. There it occurs principally in vertical seams in trap, and also in the enclosing sandstone. A mass, weighing 3704 lbs., has been taken from thence to Washington city. One large mass was quarried out of the Cliff Mine, 50 ft. long, 6 ft. deep, and averaged 6 in. in thickness.

**Suboxide of Copper (Ruby Copper)** is a cochineal red, sometimes having a greyish metallic lustre on its surface; the powder, however, is always red. It generally has a vitreous lustre, and is opaque, but occasionally is translucent, and sometimes even transparent. It crystallises in forms derived from the cube. Splendid specimens of this variety are found in Cornwall, as well as in Chessy, near Lyons, Thuringia, Siberia, Brazil, and many other places; it contains about 88 per cent. of copper.

**Oxide of Copper (Black Oxide of Copper)** occurs in black granular masses, which soil the fingers; it is always accompanied by other ores of copper, principally pyrites. It is far from being abundant in England. It occurs, however, in large veins in the Lake Superior copper region, as well as in some of the copper mines in the Mississippi Valley. The author has also been informed that it accompanies some of the ore in the celebrated Burra Burra Mine, but none has ever come under his immediate notice. It contains, when pure, 80 per cent. of copper. The following is the composition of a sample found with the ore at Chessy; it is called there "black ore":—Oxide of copper, 83.5; peroxide of iron, 2.0; copper and iron pyrites, 51.5; sulphate of baryta, 12.8 = 99.8.

**Oxide-chloride of Copper (Atacamite)** is found in the Atacama Desert, between Chili and Peru, and elsewhere in Chili. It is also found in the neighbourhood of Vesuvius and in Saxony.

**Sulphuretted and Seleniuretted Ores.**—The ores containing copper and sulphur without oxygen are the simple sulphuret, the double sulphurets, and the multiple sulphurets.

**Simple Sulphuret (Vitreous Copper)** is greyish black, and possesses a slight metallic lustre. It generally assumes the form of a regular hexahedral prism. It is found in some localities in sufficient amount to be worked, accompanying carbonate of copper, &c., as at Burra Burra. The finest specimens, however, occur in Cornwall, the crystals being magnificent. One sample, on analysis, gave—Sulphur, 20.6; copper, 77.2; iron, 1.5.

**Copper Pyrites, Sulphuret of Iron and Copper (Common Yellow Ore).**—This ore appears to be the most widely diffused of any of the copper family. It is to the immense deposits of this substance that Cornwall owes its celebrity as a copper-supplying county. It is generally, however, in this case, mixed with much sparry matter and an excess of iron pyrites; hence the general low per centage of the Cornish ores. In its pure state it is of a fine brass yellow, very lustrous on fresh fractures; when exposed to the air for a little time, it generally becomes slightly iridescent. The most frequently occurring form of crystal is a truncated tetrahedron. Its composition is—Copper, 34.78; iron, 30.44; sulphur, 34.78 = 100.0. This corresponds to one atom of sulphuret of iron (Fe<sub>2</sub>S<sub>3</sub>), and one of sub-sulphuret of copper (Cu<sub>2</sub>S).

**Peacock Copper.**—Under this name is known many ores composed, like copper pyrites, of sulphur, copper, and iron, but in different and very varying proportions. These ores constitute many species, but they nearly all have the same appearance, and in all their natural fractures they present the colours of the rainbow, or the peacock's tail; hence their names. Some kinds of this class take the name of "horseflesh ore" and variegated ore. When first taken from the mine, there is scarcely a handsomer variety of ore than this. They are generally amorphous, but occasional indices of crystallisation may be observed; it is cubical, or a form derived from the cube. There is a peculiarity attached to the pure ore of this kind—that is, an ore free from admixture with free iron pyrites—it fuses in a close vessel, without giving off sulphur, showing the iron and copper existing in it to be at the lowest stage of sulphuration, or combined with the least possible quantity of sulphur. The following is the composition of five varieties:—

	Cornwall.	Rudolstadt.	Isle of Ross.	Hitterthal.	Nadand.
Copper .....	38.2	58.0	61.1	69.5	70.0
Iron .....	32.7	18.0	14.0	7.5	7.9
Sulphur .....	29.1	24.0	23.7	23.0	30.0
Earthy matter .....	—	—	1.0	—	2
	100.0	100.0	99.9	100.0	99.9

**Antimonial Sulphuret of Copper (Grey Copper Ore)** is a double sulphuret of copper and antimony—one atom of sub-sulphuret of copper

(Cu<sub>2</sub>S), and one of sulphuret of antimony (Sb<sub>2</sub>S<sub>3</sub>). It is found at Ekaterinenbourg, Kapuck, in Transylvania, and near Grenoble.

**Stanniferous Sulphuret of Copper, Tin Pyrites (Bell Metal Ore).**—This species is very rare, and has only been met with in Cornwall and Mexico. Although it rarely occurs by itself, yet the author suspects that the tin found in the Cornish ores, and which is separated, as will be hereafter described, in the smelting, is derived from a small admixture of this variety. The pure ore appears to be a compound of equal atoms of sulphuret of copper and tin. A specimen analysed gave—Copper, 30.00; tin, 26.5; iron, 12.0; sulphur, 30.5 = 99.00.

**Bismuthic Sulphuret of Copper.**—This ore was found in the cobalt mines of Fastenburg. It exists sometimes in amorphous masses—sometimes in the acicular form; its colour is shining steel grey. It contains—Copper, 34.66; bismuth, 45.24; sulphur, 12.52 = 92.42.

**Multiple Sulphurets (Grey Coppers).**—Under this name is confounded many species, only a few of which are well known. The greater part of them are compounds of various sulphurets, but it is probable that many may be referred to the formulae of arsenio-sulphurets and antimonio-sulphurets. They are generally divided into three groups—1. Those containing much arsenic.—2. Those containing much antimony, and no lead. 3. Those containing both lead and antimony.

**Group 1.—Grey Arsenical Copper.**—These minerals crystallise in forms derived from the regular tetrahedron, possess a shining steel grey colour, but generally tarnish in the air; their fracture is conchoidal.

	Gwenap, Cornwall.	Cornwall tennantite.	Airthrey.	Freyburg.
Copper .....	48.4	45.32	19.2	48.9
Iron .....	14.9	9.26	51.0	33.8
Silver .....	—	—	—	5
Arsenic .....	11.5	18.84	15.7	14.9
Sulphur .....	21.8	24.74	14.1	19.9
Gangue .....	5.0	—	—	—
	100.9	99.16	100.0	99.9

**Group 2.—Antimonial Copper.**—The following is an analysis of a specimen from Kapuck, in Hungary:—Copper, 38.0; iron, 0.9; zinc, 6.8; silver, 0.6; antimony, 23.9; arsenic, 2.9; sulphur, 28.3 = 99.4.

**Group 3.—Plumbiferous Grey Copper.**—Analysis of a specimen from Pfaffenburg:—Copper, 12.6; lead, 40.8; antimony, 26.3; sulphur, 20.3 = 100.0.

**Sulphate of Copper** is found in large quantities in the water in filtering beds of, or rocks containing any of the sulphurets of copper. Considerable quantities of metallic copper are produced from this source by precipitating the metal by old iron.

**Seleniuret of Copper** is very rare. It was discovered by Berzelius, in a collection of minerals from the mines of Skrikerim, in Sweden. It contains 61.47 per cent. of copper. The phosphates, arseniurets, arseniates, arsenites, and silicates of copper do not occur pure in such quantities as to be available for manufacturing purposes, they only accompanying other ores in small quantities; it is, therefore, not considered necessary to more than just mention them.

**Carbonates of Copper.**—These now form a very important and interesting portion of the ores supplying our market with copper, and have been a means of considerably modifying the metallurgical treatment of the sulphuretted ores of copper, which were nearly exclusively smelted in England before the discovery of the large deposits of this form of copper ore in Australia. The introduction of this ore into the routine of treatment in our English furnaces has, doubtless, much influenced the nature of the copper now sent from the various smelting-works where it is employed. The author will endeavour hereafter to point out how this ore influences quality, as to durability, &c.

**The Anhydrous Carbonate.**—This form is very rare, having as yet only been met with (or, at all events, recognised) in Hindostan. It has a deep brownish black colour, and exists in small earthy masses, veined with malachite. It contains—Oxide of copper, 60.75; carbonic acid, 16.70; peroxide of iron, 19.50; silica, 2.11 = 99.06.

**Blue Carbonate** contains—Oxide of copper, 69.08; carbonic acid, 25.46; water, 5.46 = 100.0.

**Green Carbonate** contains—Oxide of copper, 72.2; carbonic acid, 18.5; water, 9.3 = 100.0. The two last analyses are by Phillips.

In our next week's Journal we shall commence a full description of the method of copper smelting as pursued in Wales.

## IMPROVEMENTS IN TREATING COPPER AND OTHER ORES.

[Patent granted to Thomas Irving Hill, of Clapham, in the county of Surrey, gentleman, for certain improvements in the treatment of copper and other ores, and in obtaining products therefrom. Specification dated Sept. 9, 1850.]

This invention is divided by the patentee into two parts, the first whereof has reference to the treatment of copper ores, and the second has reference to iron. With regard to the first part of his invention, the patentee states that it primarily refers to the treatment of copper ores, especially such as are termed refractory ores, and consists in using for a flux galena, or sulphuret of lead, in combination either with baryta or carbonate, or sulphate thereof, or in lieu thereof carbonate or sulphate of strontia; but the patentee prefers to use the combination of galena and baryta, as the action of the galena, he observes, is very beneficial both for the promotion of the fluxing and improving the quality of the ore.

As to the proportions in which the galena or sulphuret of lead should be combined with the baryta, or sulphate or carbonate thereof, the patentee recommends one-tenth of the former to nine-tenths of the latter. As to the quantities in which the said flux should be mixed with the ore, it is said that the workman's judgment will usually be found the best guide; but for the average of 12 per cent. copper ore, one-eighth of this flux to seven-eighths of ore should be used.

The invention comprises also a method of applying oxygen gas to the calcining and roasting furnaces, so as to mix with the fuel and ore, promoting the acidification of the volatile matters, and the oxidation of the iron and other extraneous matters; this is effected by having retorts set near the furnace, which retorts are to be supplied with black oxide of manganese, the gas therefrom being conveyed through pipes into the sides of the furnace, or over the bridge.

The second part of the invention relates to iron, and consists in the application of the above described improvements to the preparation or manufacture thereof. With regard to the application of the said flux to this purpose, the baryta is to be mixed before entering the furnace.

The patentee observes that baryta, carbonate, or sulphate, has been before used as flux, combined with matters other than galena or sulphuret of lead; and also that oxygen gas has been previously used for the above purposes, but not as set forth in his specification.

Having, therefore, described and ascertained the nature of his invention, and in what manner the same is to be performed, as required by the letters patent to him granted, he declares that he claims the use of the flux composed of galena or sulphuret of lead, combined with baryta or carbonate or sulphate thereof, or carbonate or sulphate of strontia; and also the use of oxygen gas, prepared and applied in manner set forth.

Patent-office and Designs Registry, 210, Strand, September, 1850.

**POISONING BY LEAD.**—Some remarks in the *Times* of Wednesday, upon Mr. Scoffern's patent for purifying sugar by sulphurous acid, left the public in doubt as to what quantity of lead might be taken by human beings without injurious effects. Some time since, in the west of England, a river, the water of which had been used from time immemorial by the inhabitants of a village on its banks without injury, was found to affect their health, symptoms of indigestion abounded, with loss of flesh and appetite, and there were some few cases of colic; they believed that it arose from the use of the river water, as those who used water drawn from a spring at some distance were not so affected. I was requested to analyse the river water, and found in it 1-500,000th part carbonate of lead, which arose from a mine worked at a distance of 3 or 4 miles from the village, on the other side of a range of limestone hills. There marks alluded to leave it doubtful whether 1 grain of lead taken in a week would be injurious; in the case I relate there would be only 1 grain of lead in 9 gallons of water, and yet the health of the neighbourhood was seriously affected.—WILLIAM HERAPATH: Oldpark, Bristol, Sept. 12.

\* A singular mineral, which may be called plumbiferous grey copper, was analysed by Vanquelin, who found it to contain copper, lead, antimony, iron, silver, sulphur, and platinum. It was formerly found in the ores from Guadalcanal, in Estremadura, occurring with ores of silver and arsenic. Does the ore now raised from that mine (I presume to be the same as that now at work) contain platinum? This is worthy an examination on the part of those engaged in the adventure.



# ON MALLEABLE IRON AND THE STRENGTH OF RAILWAY AXLES.

Mr. G. B. Thorneycroft, of the Shrubbery Iron-Works, Wolverhampton, some time since read a communication at the Institution of Civil Engineers, "On the Manufacture of Malleable Iron, with the Results of Experiments on the Strength of Railway Axles," which was noticed in the *Mining Journal* of the 30th March: we have since received a copy of the paper, with diagrams, and from which we make the following extracts:—

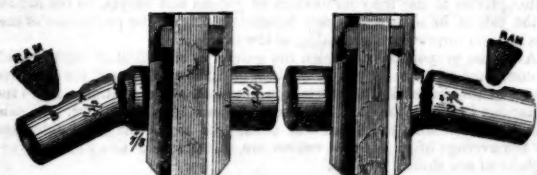
"Malleable iron may be divided into two distinct classes—'red-short' and 'cold-short'; the former being generally produced from the rich ores, and the latter from the poorer, or leaner ores. The pig-iron made from the rich ores (under the cold-blast process only) is not so fluid as that from the lean ores; when, however, it has been converted into malleable iron, it is tough and fibrous when cold, but is troublesome and difficult to be worked by the smiths, at less than a white heat; this want of ductility has caused it to be denominated 'red-short.' The pig-iron produced from the lean ores possesses, on the contrary, more fluidity, and it is thence well adapted for small castings, but when it is manufactured into malleable iron, although in the hands of the smith it is ductile and easily worked, even at a dark red heat, it becomes, when cold, weak and unfitted to support sudden shocks, or continued strains, and is hence called 'cold-short.' It is obvious, that to obtain qualities of iron suitable for the various purposes to which it is now applied, a judicious mixture of these two kinds must be made; but even this will not suffice, unless the pig-iron, forming the basis, be of a proper quality. It may be received as an axiom, that good malleable iron can only be made from good dark, and bright grey pig-iron, smelted from iron ore alone, or with a very small admixture of any extraneous substance. Iron made from white pig-iron alone, is never ductile, although it may be cold-short, whilst it differs materially from the red-short iron, made from rich ores; in fact, it possesses no good quality, either hot, or cold, and may be termed 'rotten-short.' The quality of the fuel used in the smelting furnace, and in the subsequent processes, is very important, for the produce of the best ores may be rendered utterly worthless, by the use of inferior fuel; on the other hand, iron made from rich ores, and having great strength when cold, but which cracks in working at a red heat, if smelted with very pure coal, or charcoal, retains all its strength, whilst it becomes much more ductile than if an inferior quality of fuel had been used. Hence, when a strong ductile iron is required, the best fuel must be employed in its manufacture. The introduction of hot blast for smelting iron rendered necessary a careful investigation into the comparative use of hot and of cold-blast pig-iron, in the manufacture of bars; the result of this would appear to indicate, that if the same quality of materials be used in both cases, equally good bar-iron will be produced; but it is more difficult to convert the hot-blast pig-iron into 'No. 1' bars, and the waste is greater, than when cold-blast iron is used. \* \* \*

Malleable iron becomes granular from two causes; first, in consequence of being made from naturally cold-short pig-iron; and, secondly, from a peculiar manipulation during the process of 'puddling.' If the iron be made up into balls as soon as the granulated particles will stick together, or as the workmen term it 'put together young, before it has got into nature,' the texture will be fine, and close-grained, and the fracture will present a bright granular appearance; such iron will not, however, bear sudden impact, nor will it become fibrous in texture, by working, until it is reduced to very small bars, or into plate-iron. All granular iron is much harder when cold, and will endure longer, than fibrous iron, although it is not so well adapted for general purposes. It is easy to give a fibrous fracture to iron, by welding the 'pile' or 'faggot' at a low heat, so that the interior does not become thoroughly solid; but if a pile be subjected to a sufficient degree of heat to make it perfectly sound, and the iron present a fibrous fracture throughout, when reduced to 1½ inch square, or round bars, the quality must be very good. \* \* \*

Railway axles should be made parallel from journal to journal, and of sufficient strength to prevent any vibration in rotating. If this general rule were adopted there would not be any change in texture, and consequently a less number of fractures would occur. If it be considered necessary to reduce the substance of the middle of an axle, it would be safer to use good granular iron at first, as it is naturally much stiffer, and less liable to bend and vibrate, than fibrous iron, and would probably not change its form so soon, or receive injury, whilst working under ordinary circumstances. It is, however, the author's opinion, that axles should be perfectly rigid, so as not to bend, or vibrate, even if that should have to be accomplished by making them somewhat larger in the centre, like the connecting-rod of an engine.

Many other causes of change could be adduced, but enough has been stated to prove, that the compression of iron, when cold, is certain to change fibrous into granular iron, and that vibration, or bending, even to a slight extent, if continued for any length of time, has the effect of compressing all the particles consecutively. A series of experiments was carefully made, for the purpose of ascertaining, practically, the best form for railway axles, so as to obtain the greatest strength with a given weight of material. From these experiments it would appear, that the forms generally adopted are very erroneous, especially in reducing the substance of the middle of the axles, and in turning rectangular shoulders near to the journals.

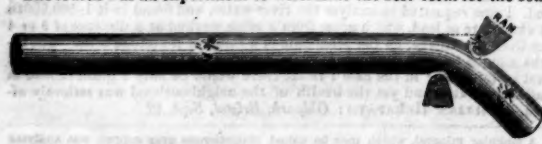
The first was an experiment to determine the best position for placing



the wheel on the axle, so that the journal may possess the greatest amount of strength for resisting the forces tending to break it. One end of the axle was firmly keyed into a strong frame of cast-iron, the neck of the journal being in a line with the front of the frame, it was then subjected to the impact of a heavy ram, falling a distance of 9 feet, vertically to the plane of that part of the axle which was struck; the force of impact of each blow being equal to five tons, and the whole amount of impact equalling 30 tons; in this case the end broke off at the sixth blow. The other end of the axle was then keyed into the frame, with the neck of the journal projecting ¾th of an inch, beyond the front of the frame, on being subjected to five blows of the ram about the middle of the journal, near the end, under the same conditions as before, this end did not break off until the 20th blow, the total amount of impact being 100 tons; thus proving, that by simply moving the face of the wheel back from the neck of the journal, the strength to resist impact was increased in the ratio of 100 to 30.

The second was an experiment to determine the strength of an axle, having a shoulder behind the wheel, and one having no shoulder. In this case an axle 3½ inches in diameter at the centre was cut in two, so that the quality of the iron might be the same in both experiments; one-half had a collar of ¼th of an inch left against the part intended to receive the nave of the wheel, which part was turned to 4½ inches diameter; the other had no collar, but was turned parallel towards the centre of the axle. The first half was then keyed into the frame, as in the other experiments, and impact to the amount of 55 tons was applied, when the end broke at the 11th blow of the ram, the face of the fracture being quite granular. The other end was next keyed into the frame, and impact to the amount of 155 tons was applied, when 31 blows were required to break it off, and the face of the fracture was perfectly fibrous throughout. These experiments prove that the relative strengths, to resist impact, where there is no shoulder, and where there is one, is in the ratio of 155 to 55.

The fourth was an experiment to determine the best form for the centre



of an axle. In this experiment a parallel axle 4½ inches in diameter, was supported and subjected to impact at points corresponding to the position of the wheels, and after receiving 15 blows from the ram, the end was deflected 1½ inch from a straight line. The axle was then drawn down in the middle,

to 3½ inches diameter, the opposite end being subjected to impact, under the same circumstances, and after the same number, of 15, blows of the ram, the deflection from the straight line was five inches; thus proving that the strength of a parallel axle compared with one which has been reduced in the middle, is in the proportion of 5 to 1½ inches. Again, it is well known, that the strength of round bars to resist transverse strain, is as the cubes of their diameters, which in the case above cited would give the parallel axle an advantage over the reduced axle in the proportion of 83·74 to 58·18; and as the same law obtains in reference to torsion, if the velocity is the same, the strength to resist torsion will be in like proportion.

Mr. Thorneycroft concludes that with regard to the forms of railway axles, it appeared to him, from the experiments, that the nave of the wheel should not be placed close to, but at some little distance (say ¾ of an inch) from the neck of the journal; also, that the shoulder behind the wheel should be entirely done away with; and instead of reducing the diameter of the axle in the middle, it would be advisable rather to increase the bulk at that point, like the connecting rod of an engine. He had never heard of a single case in which the texture of a fractured parallel axle had been found changed from a fibrous to a granular character, although a certain amount of granulation had been repeatedly observed with axles which had been reduced in the middle, and had then been broken in course of regular working. It appeared in all such cases, as if there had been a progressive and alternate action of compression and extension of the outer fibres, from the bending of the axle, whilst it was rotating; and that thus the granular fracture had been produced."

It is no wonder that Mr. Thorneycroft's paper should have created so great an interest in the scientific world, when there is found in it such a mass of valuable information, both for iron manufacturers and engineers in general. In one department of railway engineering there is ample proof given that the axles in general use on railways are not so strong by one-half as if they were made upon a truly philosophical principle, and which, we perceive, may be done by a very slight alteration of form, and without at all increasing the cost. It has long been considered that the vibration of an axle while rotating being arrested at the back of the wheel was the simple cause of the change of the iron from fibrous to crystalline, and consequent fracture; but it appears evident, from some of Mr. Thorneycroft's experiments and specimens, that simple vibration does not alter the texture of iron, and that the fracture on axles which have occurred at the back of the wheel is entirely due to the shoulder at that part; and that iron undergoes no change from the fibrous to the crystalline, except by compression; that whenever shafts or axles are made so small as to bend while rotating, compression of the outer fibres takes place, hence the crystalline annular ring observable in every fracture from this cause. Should, therefore, any accident arise on railways from an unphilosophical form of axles, and result in the loss of life or limb, with whom will the responsibility rest? for we should presume that the proper form of an axle was no longer a matter of opinion, but a matter of fact, sustained by numerous experiments, investigated, approved, and published by the highest engineering authority in the kingdom—viz.: the Institution of Civil Engineers, London. We cannot close without referring to Mr. Thorneycroft's practical explanations on the manufacture of iron, which must have been very interesting to all who have to deal with this important article, either in its manufacturing manipulations, or in its applications to those stupendous structures for which the engineering talent of the present day is so remarkable; and we may hope that the talented ironmaster may reap some solid advantage from his valuable scientific labours.

## IRON AS A MATERIAL FOR SHIP-BUILDING.

In an address, explanatory of an improved method of sheathing, to prevent fouling and corrosion, delivered at the Liverpool Polytechnic Society, by Mr. Grantham, he stated that he had first introduced the subject of iron ship-building to the Society in 1842; that since that time a great number of vessels, of all sizes, had been built; but that no effectual alteration in the mode of construction had been employed. Indeed, eight years of additional experience had only confirmed the general principles which he then advanced. Nearly all that he had stated, respecting the superiority of iron ships, had been more than realised; and the public had become so well satisfied on these points that it would be only waste of time to reconsider them. As, however, nothing is perfect, so in iron ships disadvantages had been felt, and he would name the only two of which he was sensible—the first, although a subject of interest, did not affect the mercantile marine, he alluded to the recent experiments made at Plymouth by Captain Chass, of the *Excellent*. From these it was proved that iron vessels, as at present constructed, would not answer for war purposes. The second disadvantage resulted from causes which it was his wish to obviate, and for which he had projected the plan now submitted to the society. He felt, however, that great caution was necessary in giving to the world any new plans. His experience had shown him that gradual and slow advances in practical science were the surest; but in cases, like that now before them, where there existed an acknowledged defect, that obstructed this progress, every effort should be made to remove it. His plans offered little if any advantage for purposes to which iron vessels had been, as yet, generally applied, but he thought if they were introduced they might serve to increase the use of iron ships in situations where they had not yet been employed. The present mode of constructing iron ships for ordinary purposes was as good as could be desired, and he could not suggest any material improvement. Engineers, who were the principal parties to introduce iron ships, were a long time assailed by ship-builders; but he was glad to see even this opposition relaxing. Every day more iron was introduced into the construction of even timber vessels—some parties were going so far as to make the frames entirely of iron; these he would recommend to go one step further, and to cover the ribs with iron plates; they would then have a sound ship. Some again proposed to make the sides of iron plates and the bottoms of wood; these he would likewise recommend to go a step further, and make the bottom also of iron. It was quite astonishing how parties overlooked the fact, that it was the plates which gave to an iron ship its great strength; the frames seldom possessed the firmness of those made of oak for a timber vessel, from which it might be inferred that if any part was to be dispensed with or substituted by timber it should be the ribs and not the plates. In building iron ships, England possessed advantages over other countries which, perhaps, might obviate some of the loss anticipated from the repeal of the Navigation Laws, and he (Mr. Grantham) would read a few appropriate remarks on this subject.—In our struggle with America for pre-eminence in steaming, the difference of an iron and wooden hull would alone decide the question. Suppose the *Asia* had been built of iron instead of wood, with perhaps 500 tons less weight of materials in her construction, where would she have stood in the Atlantic? The Government have indeed lately objected to the use of iron for vessels carrying the mails, because they are not suitable for war purposes. The absurdity of this will be seen, when it is recollected that all the vessels thus employed are unfit for close action, having nearly half the machinery above the water-line. Why then make any restrictions on this important point, while the engines in the wooden ship unfit them from receiving a shot to a much greater extent than from any bad result to be expected from an iron hull. Before recurring to the subject of his address, he would make another observation on the general question of iron ships. In a paper he had read before the society some years ago, he had foretold that the employment of the screw and the use of iron vessels for foreign trades would go forward simultaneously, and who that is watching the course of events but can see the progressive fulfilment of this prediction? There is no quarter of the globe where iron screw steamers will not be found—yes, the iron sailing ship too, if only we can obviate the one great difficulty attaching to iron ships on foreign stations—viz., the *fouling*. He had been connected with iron ship-building for nearly 25 years, and had repeatedly heard of plans for removing this objection, but hitherto he had not seen one that had obtained permanent reputation, and the objection to iron ships for trades where they could not be docked, still existed—the principal merit claimed for such plans as had been given to the world implied a character of *short duration*. One reason why copper itself is available for the purpose required is its oxidation in salt water, causing it continually to throw off the animalcules that adhere to it. Sir Humphry thought he had done a great service to shipowners by devising a plan for preventing this loss to copper by stopping the oxidation—and what followed? the copper became as foul as any other material would have been, and so defeated the object for which it was applied to the ship.

Mr. Grantham then exhibited some plans and models to explain the method he proposed to adopt. It had long been considered desirable to sheath an iron ship with wood, so as to admit of copper being used for sheathing, but as this plan seemed to require bolts to secure the wood to the iron, a system which would be injurious to the ship, all attempts had

been considered fruitless. He had, however, succeeded in doing this by simply placing the ribs of the vessel on the outside instead of on the inside—these ribs were of such a form that timber of any required thickness could be dove-tailed into them. Over these was nailed a thin sheathing of wood, and then copper in the usual way—the iron would be effectually preserved from all the copper by the former being well painted, and by coats of marine glue, or other non-conducting substances, placed between the timber. The cost of the vessel thus built would not exceed that of the old plan, except that the copper would be additional.

Mr. Grantham also explained the plan of a portable hot air apparatus for drying the bottoms of iron vessels previous to painting or sheathing. In the course of his remarks, Mr. Grantham alluded to objections which would probably be made against his plan. One was, whether the copper would not have a bad effect on the iron from the galvanic process; but this he showed would be impossible, from the complete separation of the two metals. The next objection was the question of corrosion, which he also had provided against. The meeting, which was very numerous, attended, manifested great interest in the observations and explanations offered by Mr. Grantham, and the lecturer clearly carried along with him the convictions of his intelligent audience. At the close of his address Mr. Grantham received the thanks of the assembly for the ability displayed in his remarks.

## ON THE INTERNAL FORM OF IRON FURNACES.

In a communication to the *Journal of the Franklin Institute*, Mr. H. Fairbairn proposes a change in the internal form of furnaces, as now generally constructed in the anthracite iron manufacture. The furnaces are usually cylinders, and when not perfectly cylindrical, the deviation from the perpendicular line from the bushes upwards, does not commence until about 10 feet from the tunnel-head. From the bushes for 14 or 15 feet upwards, there is no arch, and the wall of the furnace is a perpendicular line. Here is the error which it is proposed to remedy, for an error of the first magnitude it is, to build iron furnaces which are not correct in every part of the interior arch.

In a circle, pressure and resistance are equalised over every part, whilst in proportion to the deviation from the circle towards a perpendicular line, the pressure is towards the lowest point, because the force of gravity is increased in a corresponding degree. Therefore it is that the coals, the ore, and the limestone fall with a three-fold degree of pressure against the walls of a furnace which has only the usual deviation of 1 foot in 14 from the bushes upwards, than though the curve were 4 or 4½ feet, or one-third of the usual diameter of about 13 or 14 feet, or a true circle throughout. And this unequal pressure of the materials is the principal cause of the rapid destruction, and of the inferior yield, of the anthracite iron furnaces of the present form. When the materials, particularly the large lumps of anthracite coal, roll down, and are pressed and wedged against the walls of the furnace, the blast cannot make entrance equally through masses of such materials, and consequently makes its way upwards at the next opening, which is at the centre of the furnace, as containing less of the resisting masses, the gravity of which has carried them down against the walls. The consequence of this is, that the materials are at all times pressed and packed so densely against the walls of the furnace, that one-third only of the blast penetrates that large part of all the materials contained in the furnace; that this may be estimated as so much additional cold wall filling up the furnace, and that the weight of the blast is driven up through the centre and lost at the tunnel-head. It is, therefore, proposed that an iron furnace shall be no longer a cylinder, but an arch, conical and curved in every part. By this form the internal walls will not be perpendicular from the flues and the bushes, but will be arched, and the diameter 8½ feet increased at the widest part—supposing the distance to be 14 feet, which is the usual form. The dimensions of a perfectly formed iron furnace would be one-third of the height for the extreme width, and one-eighth of the height for the narrowest part at the tunnel-head; and if the furnace be 42 feet in height, it would be 14 feet at the bushes, and from this widest point, curving regularly to a width of 8½ feet at the tunnel-head. In a furnace of this form the materials would descend regularly and with an exact pressure upon every part; the blast would meet with no unequal resistance over any part of the materials; the combustion would be spread over all the lower parts of the masses of anthracite coal, which would not then be lodged and wedged against the walls, and that fuel would be employed in smelting iron which now is lost and wasted in the form of flame at the tunnel-head. Full one-third more iron would be made in the same furnace which should be circular in every part than in one only cylindrical—110 tons per week being produced in the place of 80 tons.

The wear and tear of the furnace would also be diminished two-thirds, and an anthracite furnace would continue in blast three or four, or more, years, without repairs, for the blast would penetrate all parts of the furnace equally; the lower parts would not be mechanically damaged as now by the pressure of heavy masses of materials concentrated at the lowest point, nor would the upper parts and the flues be burned out in the same excessive degree by the internal stream of flame driven against them, and lost at the tunnel-head. To make one-third more iron, and the furnace to last two or three times longer without repairs, are, therefore, the advantages to be gained by the adoption of the arched form of the furnace, as here proposed.

There is a deficiency of information on this subject of the internal form of furnaces—the work of Prof. Walter R. Johnson, an smelting iron with anthracite coal, being the only one in which the importance of the internal form of the furnace is preserved in view. Nor in that work is the best form of an iron furnace attempted to be given—the information being principally statistical—the dimensions, proportions, and successful or unsuccessful results in the production of iron being described of many of the furnaces existing up to about 10 years since; but there is no definite deduction to be discovered in the work of Prof. Johnson, nor any rule for the best internal form. A comparison, however, of the various descriptions and diagrams of Prof. Johnson will certainly furnish evidence of the success of the furnaces which approached to the circular form; the Stanhope furnaces in New Jersey being a proof of the advantages of such an interior, and the Shamokin furnaces of the contrary failure of a furnace of a pyramidal form interior. Practice, therefore, so far as there has been any, is in favour of the arch, equally as are all the doctrines of pressure and resistance; and an iron furnace is one continued cone of pressure and resistance, both of solids and fluids, of the coals, iron ore and limestone, and of the air and the course and direction of the blast.

PROGRESS OF SCIENCE.—THE WATER GAS.—We can conceive of few subjects more gratifying to a contemplative mind than observing the vast improvements constantly taking place, both in science and art, calculated so largely to increase our personal and social comfort, and to bring not only the necessities, but even the luxuries of life, within the reach of the great mass of the community. In this respect steam, railways, and the penny-postage have bound friends and relatives within the range of a family circle, although separated by hundreds of miles; and, last of all, that miracle of miracles, the electric telegraph, not only conveys our thoughts and wishes in an instant, as if by magic, from one extremity to another of our sea-girt isle, but, despite of winds and waves, has been made to span the English Channel, and thus enabled us to converse with our warm-hearted friends in the centre of Paris, whilst sitting at our ease, sipping our coffee or smoking our cigar, in the metropolis of England. Certainly, were our forefathers, of even 20 years ago, permitted to revisit the scenes of their native land, they would hardly believe that the world they saw was anything but sanguine as to the result, having been almost sickened of the gloom that threatened to entomb every rival, and virtually, at almost a nominal expense, to change night into day. This was, however, highly patronised, rather to much to believe, and beyond that of a mere pleasing exhibition in a lecture-room, it has now ceased to make any pretensions. Then our go-ahead friends across the Atlantic started us by their daring announcements of converting the elements of water alone, by means of electricity (obtained for nothing), into so splendid a light that you could read the smallest print a mile off. Millions of dollars hung upon the issue. Every newspaper was full of it, as the great discovery of this or any age. The day of trial came, and in one hour Payne was denounced as an arrant deceiver, and his mighty pretensions levelled in the dust. The very important subject of obtaining a supply of cheap and good gas, free from the usual contaminations of sulphur and ammonia, has for a length of time engaged the attention of the first scientific men of our day, who suggested manifold improvements, some of which have been valuable; but as their whole efforts were directed to neutralise or absorb the noxious compounds inevitably contained in all gas prepared from coal, they have been only partially successful, much of the contamination still remaining, in spite of every precaution. It seemed essential that, to obtain a pure gas, a pure material should be employed; and sceptical as we have been as to this being obtainable, or that any substitute for coal, in the production of gas, could ever be made available, in this kingdom at least, we were recently induced, by the representations of a friend, to ascertain the result of the lighting of the town of Southampton, and other places, by Mr. S. White, of Manchester's patent "Hydro-carbon gas," where no coal is required except to heat the furnace. We confirm we were anything but sanguine as to the result, having been almost sickened of the gas question altogether. However, a visit to this lovely watering-place soon satisfied us that this "water gas," as it has been called, was no phantom, but a blinding reality of the greatest brilliancy, throwing a fine, beautiful, soft light, perhaps unequalled in the kingdom, over the length and breadth of their principal street, which is about a mile long; and a look into the first-rate shops and hotels will satisfy any observer of its superior brilliancy to any coal gas he has ever seen—the ceilings, too, after nine months' use, being untouched and unvarnished, naturally excited no little surprise, proving that, unlike coal gas, it emits no smoke whatever. A visit to the gas-house is of itself a great treat; it is a handsome erection, admirably arranged, and ought to be taken as a model; it is like going into a comfortable kitchen—neither smell nor filth of any kind, and the man who has the charge of making all the gas for the town not only does the whole himself, but could attend, he says, to three times the quantity required, if needful; and so simple does it seem, that it is almost self-acting. The report into which the liquid resin is constantly running in a small stream only requiring being cleared of any sooty deposit every six or eight hours, and the water retort only every few days, while the large station meter satisfies you that, notwithstanding the quietude and stillness of the place, more than 200 feet of gas passes through it in the same time that coal retorts of an equal size would produce 100 feet. This is a most striking circumstance to every observer. The ordinary



filthy process necessary to purify coal gas, so necessitating to all engaged, is altogether avoided; and as we found, on the most strict inquiry, that while the brilliancy of this gas is decidedly superior to that from the best Canaan coal, it is produced at a much cheaper rate, it can be no surprise that its adoption is rapidly spreading, both in Lancashire and Yorkshire, where large establishments are now lighted up by it. Having thoroughly satisfied ourselves as to the value of this invention, and the certainty of its success, we were gratified to find that, instead of injuring gas property, it would materially enhance it, as by merely changing their retorts they can adopt this at once, at a comparatively small cost.—*Standard of Freedom.*

## Original Correspondence.

### CALCINATION AND FUSION OF METALS.

SIR,—I observe, by your Journal of the 7th inst., that a patent has recently been obtained by Mr. B. Todd, of Falmouth, for "Improvements in the Calcination and Fusion of Metals, combining the Use of the Blast and Reverberatory Furnaces;" but I really cannot see a solitary new idea in the whole description which you give of it. *Uncalcined*, as well as calcined ores, of almost every description, have been reduced in blast-furnaces in nearly every country under heaven. There is no great lead district which has not flues and spacious condensing chambers attached to both their blast and reverberatory furnaces. It is the same at the copper-works in Swansea, and the tin calcining furnaces of Cornwall; and some of them are very ingeniously adapted to the condensation of all the volatile metallic particles which sublime from the furnaces in which the ores are treated. With respect to employing the spare heat of the blast-furnace for a calciner, or furnace attached, a similar patent was taken out by Mr. Teague, of the Park End Iron-Works, near Coleford, Gloucestershire, in the year 1832. I do not make these remarks invidiously, but that if there really is anything new in Mr. Todd's ideas on the blast-furnace, they may be stated more specifically, as in that case your description tends to mislead.—*M. Chesterfield, Sept. 10.*

### THE FURNACE PARADOX.

SIR,—Mr. Mushet, in the beginning of his letter, dated Sept. 3, observes—"The clearest course will, perhaps, be to dismiss any feeling of annoyance." Now, he could not dismiss a feeling of annoyance without he was first in possession of it. This being the case, I beg, through the medium of your valuable Journal, to assure Mr. Mushet that nothing could be further from my mind than to give annoyance to his feelings in any way whatever. It was the formation of the natural brattice, as well as the furnace paradox, that the miners called my attention to particularly, in which, as they observed, an important principle of life and death appeared to be involved; and that formation, in my opinion, is the most likely part of the evidence for them to be struck with. If in furnace ventilation a natural brattice can be formed, then our confidence in that ventilation is gone, and we must seek for some other that will not allow of such a thing taking place. Now, as Mr. Mushet agrees with Mr. Gurney's views concerning the natural brattice, I shall say nothing more on the subject, except that I could come to no other conclusion than I did from reading his letter, whatever his meaning might be. He observes—"I have not supposed that furnace ventilation was constant;" whereas in his letter, dated July 24, he states, "But the fallacy lies in assuming any such intermittent action—the power of the furnace is constant." Now, as I can have no means of judging of Mr. Mushet's views, but only from what he says, I think that he ought to acquit me of any intention either of annoying his feelings, or giving a false construction of his opinions.

King's College, Sept. 12.

JAMES HANN.

### MINE INSPECTION—VENTILATION.

SIR,—I met with a communication from Mr. Mushet in your Journal of the 10th August, and in remarking upon it I stated that I would not be understood to sanction his mode of viewing the question as the proper one, but that for the mere purpose of disproving his conclusions, I would only apply one true law to it, and for the remainder follow his mode of viewing the matter, certainly not anticipating that I should be accused of looking upon results so obtained as embodying my own opinions as to the true state of the case; and yet he fathers it upon me, by saying, "with such allowances, and the omission of gravity, his figures might be received." Permit me once more to deny the *soft imputation*, as the only part added by me in the first place is the substitution (in the supposed absence of friction) of equal velocities for equal quantities, the remaining alterations follow as a matter of course by his mode of reasoning. Mr. Mushet finds fault with my tabular arrangement of his calculations, because, he says, I have left out the *essential datum* on which they depend. I do not comprehend which datum he alludes to, and if he left it out, why blame me for doing so in following him? Indeed, unless this datum would lead him to other conclusions than he has come to, I have clearly shown that his production would be useless. In answer to Mr. Mushet's inquiries, "J. J. A." begs to state, that whilst he cheerfully acknowledges his inability to prove by calculations that the best form for a swift sailing vessel is a cone or pyramid, with the large end first, he at the same time begs to intimate that he can accomplish a much less difficult, though certainly more pertinent, object; and that is to show that a small upcast is not so good as a large one for the purpose of ventilation. Will Mr. Mushet inform me what that element is which he states I omitted? The question extends itself further; did he omit it, and thus authorise me to do so in a mere refutation of his statements? I can only repeat that, except as modified by friction, hot air will be discharged from any sized tube by a given pressure with one and the same velocity. And I agree with Mr. Mushet that the test is practised, and refer him to the result of upwards of 500 experiments made by Mr. Péclet for confirmation of this statement, notwithstanding the expediency of not making locomotive chimneys of infinite area and weight.

A schoolboy of moderate standing could inform Mr. Mushet that his remarks about rods representing columns of air are pointless, inasmuch as fluids press equally in all directions, and, therefore, a small downcast will give the same excess of pressure on each unit of the upcast area, whether such area of upcast be large or small. Indeed, were his inferences correct, whenever the doors and windows of a room were so closed as to be of less area in their openings than the chimney, then should the air come down the chimney, and not go upwards, which is contrary to general experience. Mr. Mushet, whilst professing to maintain his original theory, I observe has dropped such statements as "from this source alone half the ventilation is lost," and adopted the more moderate one of "but, within certain bounds, the greater heat that can and will be maintained in a smaller upcast, with the same amount of fuel, compensates the increased friction." Far, however, am I from maintaining that the figures presented in the second table in my former letter (which Mr. Mushet wishes to palm off as being my real opinion) are true. I will here make an extract from a paper which I had written prior to my answering Mr. Mushet's letter. The result is certainly rather startling, but I believe is close upon the truth:—"In the case of Haswell, taking the real quantity as before the explosion (72,730 cubic feet of air per minute), and supposing the upcast pit to present the smallest area of air-course, it being 34 ft. in diameter, or (say) 70 ft. area, giving a velocity of 17 ft. per second; and supposing the mean temperature of the upcast pit to be 110°, and of the atmosphere 52°, the depth being 938 ft., the theoretical velocity would be (allowing nothing for extra density of upcast column as affected by smoke, &c.) about 82 feet per second. Hence the portion of the pressure due to the force of the wind in the upcast shaft is only  $\frac{1}{10}$  of the excess of pressure, on the assumption of the temperatures being as stated— $\frac{2}{3}$  of the ventilating excess of pressure being employed in overcoming the resistance of the mine to the air."

By reducing the upcast pit to 35 ft., or half its former area, then the proportion of the pressure due to the wind force in the upcast would be  $\frac{1}{5}$  of the entire ventilating excess of pressure, since the proportional velocity of the current in the upcast would be doubled, and, therefore, the proportion of pressure absorbed in producing it quadrupled, leaving  $\frac{3}{4}$  of such pressure only to overcome the friction of the mine; and since—

$$\sqrt[3]{\frac{2}{3}} \text{ths} : 72,730 \text{ cubic feet} :: \sqrt[3]{\frac{1}{5}} \text{ths} : 68,405 \text{ cubic feet,}$$

therefore, 68,405 cubic feet, would pass even by reducing the pit to one-half its former area—the other parts of the air-course being unaltered, except, indeed, a slight additional reduction of quantity from the increased friction of the upcast pit—a small item in the entire course of the air, a most trifling reduction in quantity, for so large a reduction of area of upcast. Still, Mr. Mushet, observe that it is a reduction, and not an increase, as you would have us suppose. I believe that the true theory of the area of different parts of the circuit of a current of air, with the least amount of excavation for a given quantity of air, is, that the area must vary in proportion to the square root of the volume assumed by the air, in each part of its circuit, respectively—an arrangement which would prevent throttling;

and the pressure on each unit of area would require to be one and the same over the entire circuit; for if the bulk was enlarged to 4 times, the area should be  $\sqrt{4}$  (2) times as great as before—the wind force being proportional to the square of the velocity, but inversely, as the density of the air would give  $\frac{3}{4} = 1$ , as at first. Again, if in another part the bulk become

9 times, the area should be  $\sqrt{9}$  (3) times as great, and, therefore, the velocity 3 times as great—the square of which is 9; but 9 divided by 9 for decreased density = 1, the same as at first. It is needless, however, to state that economy requires that a larger area be maintained where it is easier and cheaper obtained, and *vice versa*, than is pointed out by theory. Although I have not met with this view of the question before, I have great confidence in its truth; and believe that Professor Hann's work will confirm the view I have taken.

Mr. Taylor makes a remark relative to Haswell, which I believe I merely reiterated in stating that the increased current arose from the non-conducting surface of brick; but I am not aware of anything he said to sanction Mr. Mushet's opinion, that a small is better than a large upcast, independent of the materials of which they are composed; nor have I assumed that Mr. Taylor was ignorant of what was before him. Mr. Mushet will not yet cease leaping to conclusions, in spite of the *Gateshead Observer*. On what grounds does he conclude that I am an inspectionist, or the contrary?—*J. J. A.: Loughor, Glamorganshire, Sept. 10.*

### RECENT AMERICAN PATENTS.

**FIRING KILNS FOR POTTERY WARE, BLACK-LEAD CRUCIBLES, &c.**—*J. Dixon, says*—"My invention consists in substituting resin for the kinds of fuel heretofore used for these purposes, the distillation of which readily, and at a low temperature, evolves a great quantity of highly inflammable gas, which, in an inflammable or inflated state, extends through all the parts of the kiln, giving an equal, or nearly equal, heat throughout that will bake equally, while at the same time it contains more carbon than the supporter of combustion can take up in passing through the flues of the kiln formed by the ware, and thus prevents the injurious action of the heated oxygen on the surface of the ware, particularly when baking black-lead crucibles. *Claim*—What I claim as my invention is the use of resin, or the distillation thereof, as a combustible for baking pottery and all other kinds of earthenware, substantially as described, as a means of preventing such articles from being 'over-fired' or 'black-burned,' and whereby, also, the injurious action of atmospheric air on the surface of black-lead crucibles, pottery ware, bricks, &c., is avoided as described."

**COMPOSITION FOR ENAMELLING HOLLOW WARE.**—*Messrs. Paris say*—"Our invention consists of a new and useful composition for coating articles made of either wrought or cast-iron, so as to keep off the atmosphere, and other fluids and matters which would cause the iron to oxidise. The composition consists of 180 parts of flint glass reduced to powder, 20 parts of carbonate of soda, and 12 parts of boracic acid. These matters, being intimately mixed, are to be placed in a glass-maker's crucible and melted; the same is then to be drawn off and cooled, and then broken down into fine powder. *Claim*—What we claim is the new and useful glazing composition for coating articles of iron to prevent oxidation, substantially as specified."

**APPLYING FUSIBLE METAL TO BOILERS.**—*E. H. Ashcroft says*—"My invention consists of a tube closed by a perforated cap filled with fusible metal; the cap is protruded through and secured in an opening made in that part of the fire or flue space of the boiler which soonest becomes unduly heated, so that its bottom is acted upon directly by the flame; and the open extremity of the tube is passed through the boiler and communicates with the external air; when the fusible metal melts it no longer opposes an obstacle to the passage of the steam through the perforations of the cap into the tube, but allows it to escape through the latter, and give notice of the heated state of the boiler. *Claim*—What I claim as new, is inserting the fusible metal in a perforated cap which is protruded through and secured into any sheet of the fire or flue surface of the boiler, substantially as herein set forth, in such manner that the bottom of the cap is exposed directly to the action of the heat, the fusible metal within the cap closing the end of the tube through which the steam rushes to give warning when the metal melts."

**SURFACE CONDENSER FOR STEAM-ENGINES.**—*J. P. Pirsson says*—"My invention consists in certain improvements in condensers of steam machinery, whereby the boilers used for generating the steam shall be supplied with pure water, or water freed from saline or other foreign substances. *Claim*—What I claim as my invention is the combination of a surface or radiating condenser with a box or case, in such a way that the condensation of the steam shall be effected therein without subjecting the said radiating condenser to atmospheric pressure, in the manner described. I claim the aperture or its equivalent, for maintaining the equilibrium, and as a passage of any steam which may remain uncondensed in the radiating condenser, in the manner set forth. I claim connecting the evaporator with the chamber, substantially as described, whereby I can draw off the saturated water from the bottom of the evaporator."

**MAKING CAST-STEEL.**—*J. Dixon says*—"The nature of my invention in the process of making cast-steel directly from pig or cast-iron, consists in partly decarbonising the pig-iron by cementation in an oven with pulverised oxide of iron, and then melting the partly decarbonised pig or cast-iron in crucibles. *Claim*—What I claim as my invention in the above process of making cast-steel, is partly decarbonising pig or cast-iron in an oven stratified with pulverised oxide of iron substantially as described, and then melting such decarbonised pig or cast-iron in crucibles substantially as described."

**HYDRAULIC BLOWERS FOR FURNACES, &c.**—*R. Cook claims* as his invention the combination of cavities or air cells, formed in part by the partitions on the periphery of the drum of the wheel or receiver of compressed air, with said drum or receiver, the exterior floating valves, the interior valves, and the hollow shaft, all forming parts of, or connected with, a wheel to be turned when partially immersed in water, for the purpose of producing a blast of air through the hollow shaft, to be used in heating, smelting, and other manufacturing and mechanical operations.

**ELECTRO-MAGNETIC ENGINES.**—*J. H. Lillie says*—"My invention consists in the employment of a number of permanent horse-shoe magnets, compound or single, revolving on a wheel in front of an electro-magnet or magnets fixed stationary to the frame, and in conjunction therewith I employ a helix of fine wire around the outside of the electro magnet, for the double purpose of producing other electro magnets and to destroy the secondary or vibratory currents in my first electro magnet. I also employ a new and convenient pole changer, connected with the wheel of permanent magnets by gearing, as hereafter described. *Claim*—What I claim as new is, first, the employment of induced electricity as above stated, in producing magnetism in the secondary electro magnets, to be used as a motive power in connection with the prime mover, and to neutralise the secondary currents of the principal magnets formed by the direct current from the battery. I claim the combination of the magnet changer and pole changer substantially as set forth."

**SUBMERGED ROCKER FOR SEPARATING ORES.**—*O. Edes says*—"The nature of my invention consists of a frame into which is fitted any required number of pans, which can be removed and replaced at the pleasure of the operator; the frame is provided with pivots or journals which have bearings in the ends of levers or arms attached to a box-boat or platform, in such a manner that the frame carrying the pans can be lowered into, or raised from, the water; the earth to be washed is placed in the pans and lowered below the surface of the water, and the frame carrying the pans is rocked by means of a lever operated by a person in the box or boat, or upon the platform, to which the frame may be attached. *Claim*—What I claim as new, is the combination of the rocking frame, the pans, the levers, and the bars, attached, secured, and adjusted to the box, or to a platform or boat, in the manner, and for the purposes substantially as herein described."

**IMPROVED ORE WASHER.**—*W. M. Hughes claims* as his invention separating substances differing in specific gravity, or washing metallic ores, by means of oblique currents of water, and a horizontal one passing over the same in a reverse direction, substantially in the manner described; the oblique currents being produced by inclined surfaces or their equivalents.

**COATING IRON WITH COPPER OR ITS ALLOY.**—*E. G. Pomeroy claims* as his invention or discovery—firstly, the before described process of coating and impregnating iron, in all useful shapes and forms, with copper or any alloy of which copper forms a part; the said process consisting of cleansing with sulphuric acid, defending the cleansed surface with a coating of clay or other alluminous earth, drying the same, and then plunging the article thus coated into melted copper or some alloy of that metal; secondly, he also claims the use of the clay paste to protect the metal from oxidising, during the process of alloying or coating the metal plates or pieces of iron as set forth.

**IMPROVED TUBE.**—*J. Pawling claims* as his invention the placing within a chamber, having numerous apertures at the top and a discharge valve at the bottom, an upright pipe open at both ends in the manner described, whereby a blast of the greatest intensity is delivered at the centre of the fire, and the vertical pipe may be readily freed from ashes, cinders, &c.

**STEAM-BOILER FURNACES.**—*B. Crawford says*—"The nature of my invention consists in heating the air required for the combustion of the fuel by the waste steam of the engine and the waste heat of the boiler flues, and then forcing it through the ash-pit into the fire by jets of steam which are mingled with the heated air, and likewise pass into the fire. In the employment of self-revolving adjusters to discharge heated steam among the gases above the fuel in the grate, to co-operate with the hot air and steam forced through the ash-pit, in producing a perfect combustion, while the draft is maintained by jets of steam discharged through self-revolving adjusters in the smoke-pipes. *Claim*—

—What I claim as new, is the injection of whirling jets of highly heated steam among the gases evolved by the fuel on the grate, simultaneously with the forcing, by the steam blower, of a stream of mingled steam and heated air through the ash-pit into the fire, the air being heated substantially in the manner described by the exhaust steam and waste heat of the flues, and the draught of the flues being maintained by whirling jets of steam injected by the steam-blower."

**ILLUMINATING GAS FROM BITUMEN.**—*A. Geaner says*—"My discovery consists in having obtained from compact and fluid bitumen, asphaltum, chapote, and mineral pitch, a new illuminating gas, which I denominate 'Kerosene Gas.' This gas differs from all other illuminating gases, for, as the bitumen contains no sulphur or nitrogen, it is free from sulphuretted hydrogen, sulphurous acid, sulpho cyanogen, cyanogen, ammoniacal gas, and azote, and its relative quantities of carbon and hydrogen differ from those of the gases heretofore used for the purposes of illumination. *Claim*—What I claim as my invention, is the use of compact and fluid bitumen, asphaltum, chapote, or mineral pitch, for the production of illuminating gas, to be substituted for other materials now in use. I also claim the retort, in combination with its moveable case, in the manner and for the purposes set forth."

**EXPANSION GEAR FOR PUPPET VALVES.**—*T. McLaughlin says*—"The nature of my invention consists in the producing of a more easy and safe cut-off for steam, by the combination attachment to the end of the rock-shaft of an arm or lever, having an angular quadrant-shaped opening in it of about 90°, more or less, and attached to the back of it, by means of a pin or bolt through its lower end, a quadrant-shaped plate, which has three holes pierced through it (a greater or less number may be used if required) for the purpose of proportioning the half, three-quarter, or full supply of steam. Into either of these holes, and through the angular opening in the arm, is attached one end of a connecting-rod, the other being belted to a reciprocating plate connecting the ends of the two eccentric rods on the main shaft. *Claim*—What I claim is the use and employment of the connecting-rod, acted upon by two eccentrics, in combination with the reciprocating plate and arm, having an angular opening in it, and quadrant-shaped plate, or its mechanical equivalent, attached thereto, for the purpose of working puppet valves, in form and manner as set forth."

**EXCAVATING AUGER.**—*J. Buck claims* as his invention the formation of a machine or instrument for boring the earth under water or otherwise, and retaining the substance bored until it can be brought to the surface, which I construct in the manner following:—I first make two sections of a cylinder, or pods, the one of which is enough smaller than the other to admit its turning into the larger one, and I connect them together by pivots through the ends of each, the larger section of a cylinder, or pod, having a lip similar to a pod auger, and I attach a shaft or handle firmly to the upper pivot, which pivot passes through the centre of the outer section of a cylinder, or pod, and is attached firmly to the smaller section of a cylinder, or pod, so that by turning the shaft one way, I put it into a pod auger shape ready for boring; by reversing the motion of the handle or shaft, it turns the inner section of a cylinder out of the other, making it into a cylindrical or bucket shape, and thereby secures the substance bored.

**AIR-HEATING FURNACES.**—*H. A. Engles says*—"The nature of my invention consists in arranging a pair of concentric cylinders over a furnace, so that the flue can be made to pass spirally between the cylinders, thus making the inside face of the inner cylinder and the outside face of the outside cylinder radiating surfaces; and, in addition to this attaching the base of a cone-shaped drum or chamber to, and inside, the lower end of the inner concentric cylinder (or in any other suitable way), so as to obtain a radiating surface from the outside of the drum, which is thus made to form the roof of the furnace; the whole fixtures thus being made to furnish the most extensive radiating surface within the smallest possible compass. This arrangement also enables a small air chamber to furnish a comparatively large amount of heated air. Another feature of my invention consists in combining with the furnace a steam-inflator, whereby the heated air in the chamber surrounding the furnace is supplied with an adequate degree of moisture, so arranged as to be regulated at pleasure, and thus obviating the unhealthy and disagreeable effects due to air which, in the process of being heated, is rendered too dry for being breathed, and, therefore, unfit for domestic or other apartments. *Claim*—What I claim as new, is constructing a furnace for heating air with a spiral flue passing up between concentric cylinders, when this is combined with a conical roof to the furnace within the inner concentric cylinder, thus obtaining the most extensive radiating surface within the least space, and in a simple compact form."

**ELECTRIC TELEGRAPHS.**—*W. S. Thomas says*—"My invention consists in making marks or signals for telegraphic purposes, by means of the heat generated, developed, or controlled, by the passage of an electric current along attenuated conductors, wires, or points. *Claim*—What I claim as new, is the making of signals or marks for telegraphic purposes, by the agency of the heat generated, induced, or controlled by a current of electricity passed along attenuated conductors, wires, or points, substantially as herein set forth; the signals being the flashes of light emitted by the heated conductor or points, are manifest to the eye of the operator; the marks being produced on the paper by the heated points or conductor, are the record of the message."

**GAS GENERATING APPARATUS.**—*C. F. Brown says*—"My improved apparatus and mode of producing gas consists in so arranging a retort for producing an illuminating gas, and adapting a furnace thereto, as to produce a brilliant illuminating gas from resin, combined with a due proportion of decomposed water charged with carbon. *Claim*—What I claim as new, is the supply tube combined with the vaporising cup as herein set forth, for the double purpose of supplying liquid for making gas, and for vaporising the same before it comes in contact with the decomposing surfaces in the retorts for the purpose set forth. I also claim the compound retort, constructed and arranged as specified."

**GIVING A ROTARY MOTION TO METAL IN CASTING CHILLED ROLLS.**—*J. C. Parry says*—"My invention consists in the insertion into the mould in which a roller is cast, of a small cylinder of iron or other metal, of a peculiar shape, hereinafter described, which is attached to a rod, and placed in such a position inside of the mould, and fronting the mouth of the gate through which the melted metal enters the mould, that the melted metal, after leaving the gate, and when it has entered the mould, is diverted from the straight direction with which it entered, and being unable, by the position of the small cylinder with a wing attached to it (which I shall call a wing-dam), from running otherwise in the mould than in a circular direction around its circumference, it receives a strong circular motion, which continues until the process of casting is finished. *Claim*—I claim as my invention the use of the dam attached to the rod placed inside the mould, in chilled rollers and similar castings, as described, for producing a circular motion in the melted metal."

**CONTRACT FOR IRON STEAM-BOATS IN BELGIUM.**—Several iron steam-boats have been contracted for in Belgium, intended to run upon the Rhine, the Elbe, Scheldt, and the Rhone, to Lyons, Avignon, &c. The large iron foundries of Liege, Verviers, Seraing, Charleroi, &c., have for some time been very active; the greater portion of the machinists and engineers in these works are English, and many of the men receive high wages. Some considerable contracts have also been entered into with the railway companies for locomotives, rails, &c.

**IRON STEAM YACHT FOR THE EMPEROR OF RUSSIA.**—A beautiful yacht, built of iron, by Mr. Mare, at Blackwall, is at present in the East India Dock, having her engines, of 140-horse power, put on board by Messrs. George and Sir John Rennie, and is expected to be ready for trial down the river in about three weeks. This fine vessel, when completed, will be navigated to St. Petersburg for the use of the Emperor of Russia. She is 180 ft. long by 21 ft. 6 in. in breadth, and 10 ft. depth, and although 390 tons burden will only draw 4 ft. of water. Her cylinders are on the oscillating principle, 46 in. in diameter, with a stroke of 3 ft. 6 in., and the whole of the works connected with them are finished in the best style of workmanship, and more like the works of a superior description of clocks than the machinery of a marine steam-engine. The eccentrics are concave and do not require flanges, and the bearings are of a new description of metal, which will not heat, however great the friction or numerous the revolutions of the machinery. The parts are so well arranged, and under such admirable control, that a very young person could work and manage them with the greatest ease. The vessel is to have paddle-wheels with the latest improvements, and is expected to have a speed of 17 miles per hour.

**THE NEW PACKET STATION AT LOWESTOFT.**—One of the new steam-ships, the *Prince*, designed by Captain Andrews, the harbour-master at Lowestoft, for the contemplated packet service between that port and Hamburg, made an experimental trip down the river on Tuesday. She is a fine stately-looking vessel of 446 tons burden. Her style of build, engines, and internal arrangements have had the benefit of every improvement in naval architecture, and are such apparently as will secure, as far as possible, speed, security, and accommodation. Leaving her moorings at half-past 10 o'clock, with several eminent engineers and other scientific gentlemen on board, she steamed down the river below Seareach in excellent style. During her progress she had frequent opportunities of testing her speed with the fast river steamers, and in every instance she exhibited a superiority of rate. Her speed over the measured mile exceeded 15 miles an hour. She is fitted with engines of 220-horse power, with oscillating cylinders by Penn. They worked with the greatest ease, scarcely any vibration being perceptible. The wheels are 20 ft. in diameter, each wheel being fitted with 12 improved floats, and during the trip the average number of revolutions were 80 a minute. Her dimensions are—length, 160 ft.; breadth, 24 ft.; and depth, 13 ft.; and no expense seems to have been spared in rendering her a first-class packet.

**ARRIVALS FROM ITALY.**—The arrivals at the present time from abroad comprise some unusually large importations of works of art from Italy, which assume a degree of interest and importance. A vessel which has just arrived in the docks from Leghorn has brought the large number of 145 packages of alabaster and alabaster works, and 41 packages of fine arts, besides several cases of pictures, a large quantity of marble in blocks, and other articles of Italian produce.



# WHEEL PROVIDENCE SILVER-LEAD AND COPPER MINE.—SOUTH SYDENHAM, TAVERSTOCK, DEVON.

In 5000 shares.

CONDUCTED ON THE COST-BOOK PRINCIPLE.  
OFFICES—3, WALBROOK-BUILDINGS, LONDON, where the original Reports and samples of the Ore, Gossan, and Lodes, may be inspected.

## REPORT OF MR. EVAN HOPKINS.

This mineral property is situated in the parish of South Sydenham, on the east bank of the River Tamar, near the Horse-bridge. The geological formation of the district is a micaceous clay slate, slightly dipping westward, and is intersected by several cross-courses, of favourable appearance and angular position, and about a mile north of the Wheal Maria lode (the Devon Great Consols). Although the lode, as far as it is developed in the adit, predominates in lead, yet all the indications observed in the rock, on the surface, and underground, as well as the general character of the formation of the lode, show that it will be a copper lode in depth, and that the lead will be confined to subordinate parts near the surface, and oblique branches, near the west boundary of the sett. On the opposite side of the river, the same lode has been worked for lead and copper some years ago. The general formation, the gossan, and the composition and structure of the rock, the mineral seen in the bottom of the adit, &c., fully warrant an immediate outlay. I was much pleased with the appearance underground, and it is my belief, with good management, you will have a very productive mine in this quarter, and I am surprised to find such a sett so long neglected.

(Signed) EVAN HOPKINS.

Tavistock, Sept. 13, 1850.  
A limited number of the shares only will be disposed of. For price, prospectuses, and particulars, apply to the Secretary, at the office, 3, Walbrook-buildings, London.  
Persons desiring further information hereon before investing, are referred to Evan Hopkins, Esq., C.E., F.G.S., Austinfriars, London.

# WHEAL ZION COPPER AND SILVER-LEAD MINE, CALSTOCK, CORNWALL.

ON THE COST-BOOK PRINCIPLE.

In 2048 shares, of £1 each.

OFFICES—5, WHITE HART-COURT, LOMBARD-STREET, LONDON.

**BANKERS**—Messrs. Spooner, Atwoods, & Co., 37, Gracechurch-street.  
**SECRETARY**—Mr. Fenton.  
This valuable MINE is in the rich mineralised Tavistock district; is held under lease from His Royal Highness the Prince of Wales and Duke of Cornwall, for a term of 21 years, at a royalty of 1-15th, and situated in the parish and manor of CALSTOCK, in the county of CORNWALL; bounded on the north by Wheal Arthur, on the west and south by Wheal Edward, Wheal Calstock, and Oke Tor Mines, and on the east by Wheal Russell, Bedford United, George and Charlotte, and other mines, and the River Tamar. The lodes are very numerous, several of which have been satisfactorily explored, and their value ascertained; they were partially worked several years since, when deep adits were driven, and shafts, sunk, &c., at a vast expense, all of which were re-opened in April, 1849—since which time the mine has been at work, and many important discoveries made.

Four of the lodes are found to contain large quantities of copper and silver-lead ores; and a small outlay will now bring the mine into a profitable state of working, and realise handsome dividends to the shareholders.  
Reports from experienced mine agents, a map of the mine, and samples of the ore, may be seen, and all further particulars known at the offices of the company, 5, White Hart-court, Lombard-street, London, where shares may be obtained.

W. FENTON, Secretary.

# STIRLING'S PATENTS FOR IMPROVEMENTS IN IRON.—1. TOUGHENED CAST-IRON, which is double the strength of ordinary cast-iron, and only from 10s. to 12s. per ton extra.

2. ANTI-LAMINATING RAILS AND TIRES FOR WHEELS at an extra price of about 7s. 6d. per ton. ALSO IMPROVEMENTS IN THE MAKING OF WROUGHT-IRON—saving one process to the manufacturer.

Further particulars and terms of license, &c., may be obtained on application to Mr. Jee, civil engineer, No. 6, John-street, Adelphi, London; also from the London agents, Messrs. GARDEN and MACANDREW, 34, Dowgate-hill; and the Scotch agents, Messrs. J. H. Johnson, 166, Buchanan-street, Glasgow and 20, St. Andrew's-square, Edinburgh.

**HUBBUCK'S PATENT WHITE ZINC PAINT** combines ELEGANCE, DURABILITY, HEALTH, and ECONOMY. Unparalleled in whiteness. It is permanent for ages—unaffected by bilge water, sugar cargoes, vapour from coals, or the most noxious gases—equal to the finest coal painting, without the use of varnish—favourable to the health of the painter, and to the occupants of apartments newly painted with it—covers so much work, that it becomes cheaper than the most poisonous paints hitherto used. Each can is stamped "HUBBUCK, LONDON, Patent." A circular, with full particulars, may be obtained from the principal dealers in paints, and at the works of Thos. Hubbuck and Son, opposite the London Dock.

# SEWERAGE OF LONDON.—The ATTENTION of the COMMISSIONERS appointed to determine upon the MOST EFFICIENT MATERIAL for the CONSTRUCTION of the SEWERS of LONDON, is particularly directed to the ASPHALTE OF SEYSSSEL, which more than any other material is applicable to the CONSTRUCTING and INTERNAL COATING OF BRICK CULVERTS and OTHER CHANNELS for DRAINAGE.

The experiments made by the Royal Artillery on the embankment of Plymouth Citadel, constructed of Seyssel Asphaltic Brickwork, under the orders of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalt over all other cementitious compositions. A printed account of these experiments can be had on application to Seyssel Asphalt Company—"Claridge's Patent"—Established 1838.  
Note.—The application of the Asphalt of Seyssel is specially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in marshy situations, and it has been suggested that it would be peculiarly applicable for covering the areas of closed grass yards, and for the construction of catacombs.

**IMPROVED SHIELD FOR BROOCH PINS, &c.**—Amongst the novelties recently registered is an improved shield, or sheath, for the point of the pin of a brooch or other fastener, which consists of a small plate, or piece of metal, intended to be applied to the brooch, &c., at the proper place. This plate, or piece of metal, is to be turned over, so as to form a bridge, which is turned in at the sides, and prevents the pin slipping off sideways through the side openings between the bottom plate and the bridge—the crown thereof being of such configuration as to induce the pin to remain at that point. By this arrangement, the point of the pin will be better protected, and the brooch, &c., secured in a much safer manner than heretofore. The inventor and proprietor of this ingenious contrivance is Mr. Henry Phillips, of Birmingham, manufacturer.

## New Patents.

### LIST OF PATENTS GRANTED DURING THE PAST WEEK.

P. Erard, of Paris, for improvements in the construction of piano-fortes.  
R. Langdon, the younger, of Derby, glove manufacturer, and T. P. Tabberer, of Derby, manufacturer of elastic fabrics, for improvements in the manufacture of looped fabrics.  
A. P. Price, of Margate, Kent, chemist, and J. H. Whitehead, of the Royal George Mills, Saddleworth, near Manchester, for improvements in filters.  
T. L. Paterson, of Glasgow, North Britain, manufacturer and calico printer, for certain improvements in the preparation of textile materials, and in the finishing of woven fabrics, and in the machinery or apparatus used therein.

### DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

H. Booth, Swinton, Lancashire, fork for the web stop motion used in looms, or machinery for manufacturing woven fabrics.  
W. Craig and I. Whitesmith, Glasgow, brake for slubbing and roving frames.  
L. C. Hertelet, Fitzroy-square, Highgate, double socket-joint for connecting tubes, or pipes without flanges.  
L. Cox, Long-acre, or clock, with hood for travelling or walking.  
J. L. Sands and E. O. Nitzman, Holborn-hill, self-supporting trousers.  
G. Wollenhoim, Sheffield, doubly carbonised I. X. L. razor.—*Mechanics' Magazine.*

## ACCIDENTS.

**Wheal Pie (St. Agnes).**—Just after W. Biddick had emptied the kibble, and thrown it into the shaft, he was seen to fall in head-foremost after it. From the evidence of the kibble-filler, who was down in the 40 fm. level, it appeared that he pitched on his head on the plate-piece, and fell from thence 6 fms. His brains were scattered about the plate-piece, and he was quite dead when found.

**Bathwick Mine.**—E. Reynolds fell from a platform, or collar, about 3 fms., among broken rocks, cutting his head, and bruising himself very severely.

**Tipton.**—Thomas Hughes was killed by a fall of coal, while at work in Messrs. Roberts and Eberhardt's pit.—Edward Clave, 12 years of age, was killed by a piece of burning coal falling down the shaft of a pit belonging to Mr. Giles, at Dudley Fort.—Daniel Warr was killed by a fall of coal, in Messrs. Welsh and Barrow's pit.—Edward Thomas was killed by a "bow" falling down a pit-shaft, which he was sinking for Mr. J. Whitehouse.

**Kingsnorton.**—As W. Smith was "cogging" in a coal-pit at Brockmoor (placing coal to protect the roof from falling), he was killed by a mass of clod falling from the roof.

**Preest.**—As several children were playing near Stanley Colliery, a little boy, named John Ackers, accidentally fell down the shaft, and was literally smothered to pieces.

**Bilton.**—Michael Mahon was killed by some coal falling while loading a skip in a pit at Willingworth field. It appeared that his neck, left arm, and right thigh were broken by the fall of the coal. The place where Mahon had been working was about four yards wide, and the roof was about six feet high. The coal was considered safe, but he had neglected to prop the roof.—*Waterhampton Chronicle.*

**Badley.**—James Mould, eight years of age, son of a collier, fell into a coal-pit belonging to Mr. Pemberton, of Sodom, and was found dead some time afterwards at the bottom of the pit in about 4 feet of water, with his skull dreadfully fractured.

**Hanwell Colliery.**—N. Brownless, pitman, was knocked down and run over by a set of waggon laden with coal, on the incline in the Little Pit. When found, he was quite dead.

**Wednesbury.**—Michael Blake was killed by a fall of coal while working in a pit belonging to Messrs. Bagnall, near the Waterloo furnace.

**Outpale Conduct of an Engineer.**—A serious accident occurred at a pit belonging to the Parkfield Company, Bilton. Three lads were proceeding down the shaft for the purpose of feeding the horses, and had got into the skip, but instead of being lowered into the shaft, they were hoisted over the pulley, and Banks and Tago were thrown upon the bank with great violence; the other lad, fortunately, the presence of mind to jump out, on seeing what was about to occur, and sustained no injury. His less fortunate companions were injured very severely, especially Banks, whose ultimate recovery is yet matter of uncertainty. The engineer is a fellow named Joseph Griffiths, who caused the death of a poor collier in a similar manner only a few months ago. He was indicted for manslaughter at last sessions, and acquitted by direction of the judge.—*Birm. Journal.*

**Calisla.**—The month of August has been very full of accidents to the miners. By an explosion in La Julia, caused by carelessness in blasting, one man was killed and one wounded. In La Consolacion, two brothers were killed by the falling in of works. In the Aamo Mine, a man's legs were broken by the fall of a stone.

# THE MINING COMPANY OF WALES—

RHOSSYD—"PENANT OF FENESTING"—SLATE AND DENBIGH GREAT SLAB QUARRIES COMPANY.

CAPITAL £120,000.  
In shares of £5 each.—Deposit £2 10s. per share.

## PROSPECTUS.

THIS COMPANY is FORMED FOR EXTENDING THE WORKS on the magnificent VEINS of ROOF SLATE along the celebrated FENESTING RANGE; the rich and extensive COPPER, LEAD, and SILVER-LEAD MINES, already productive, and developing along the Cwm Ciperth, Gilvach, and Blessey Penant mountain districts, in Carnarvonshire, and the Great Slab Quarries in Denbighshire.

## RHOSSYD AND WRYSGAN SLATE QUARRIES.

The slates now being raised from the Rhosyd veins, just cut, have been pronounced by several engineers and slate agents as of a very superior quality, and the veins themselves of the highest and most productive order in sound slate rocks—the tabular structure and purity of metal of which, with their other fine qualities, have obtained for them the name of the "Penant of Fenestling Slate Veins." Indeed, the slates from these veins have been several times tested by the best judges in every possible manner, and finally reported to be of the best quality.

The Rhosyd veins of slate continue through Wrysgan, another estate of vast extent—paying no royalty whatever, and held by lease on a small yearly rent. This lease has been purchased on advantageous terms, and as it immediately adjoins Rhosyd, can be worked with great facility and economy under the same local management. Some cargoes of superior slates from the Wrysgan Open Quarries are now on the floors, and the works are in a fair state of progress—the monthly produce of which, even at present, shows the advantages that may be expected to attend the interests of the company in connecting the Wrysgan and Rhosyd Estates, and placing both under the same direction.

## CWM ORTHIN SILVER-LEAD MINES.

Besides the above slate properties, a very promising silver-lead mine has been opened on a good lode of ore, on the north-eastern verge of one of the mountains on Rhosyd, called Cwm Orthin, which is included in the Rhosyd lease. About 5 fathoms of shallow levels, &c., have been driven, from which some tons of ore are now on bank, that produce 36 ounces of fine silver per ton, and seems to be of the same character as that of the celebrated Daren and Cwm Synlog Mines, in Cardiganshire.

## GILVACH AND CWM CIPERTH COPPER MINES.

The extent of these mines on the lodes is about two miles. Two lodes have been proved in distinct places along their bearings. On Cwm Ciperth there is a water-wheel with pumps, &c., and a shaft with several shallow drivings therewith. The greatest depth about 18 fathoms, at the bottom of which there is a lode of 5 feet wide, well mixed with copper ore, and carrying a continuous rib of 2 feet, nearly full of solid ore. This lode is very promising—as gossan and kinifly as any miner could wish, and likely to improve still further in depth. More powerful machinery must, however, be erected, and a change made in the water-course, to put this mine to work, to make those high returns promised by present indications.

Gilvach is undoubtedly a great mine. It has already produced several hundred tons of ore at shallow workings, and now shows, on small drivings at bottom of wine, or shafts, a lode of 4 feet wide, quite solid. Some small shipments of ore have been lately made, from trials at these bottoms, and heaps of ore from the same are now on the washing floors. The adit leading to the wine shafts is, however, rather tortuous, and, as indeed, are the wine shafts themselves, and the water is strong at bottom; therefore, it is advisable to open a new adit level, to command the bottoms (see report), which, when done, will render available at once some thousand fathoms of rich ore ground, and some hundred fathoms of a most productive lode.

But, besides all this, there is being worked a deep adit level, some 12 or 13 fathoms still lower down the mountain, that has just cut one of the southern lodes, parallel and within a few fathoms of the former, which shows rich copper ore, and is very promising. It needs only to be remarked, in confirmation of the favourable opinion reported of these mines, that the same lodes have been worked on for several years, and are now being worked, on the north eastern side of the mountain, in the celebrated mines of Drwg Coed, &c., distant, in horizontal range, from Gilvach 200 fathoms, and at present producing immense quantities of ore, reported 1000 tons monthly. Indeed, several railway waggons are seen constantly in active service, bearing their rich burdens to the well-arranged premises of the company at Carnarvon for shipping.

## BLAEN-Y-PENANT.

\* One mile east of Gilvach, lead, copper, silver-lead, and sulphur mines, of great note, present themselves, and are now in the possession of the company. They were opened by poor men to an average depth of seven or eight fathoms, and ores raised sufficient to equalize expense, but want of system and machinery to command the water, caused the works to be suspended, and the lodes, particularly offering in a district pregnant with metallic riches, are highly favourable, and warrant a recommendation to open and work these mines with due spirit.

## THE DENBIGH GREAT SLAB QUARRIES.

These quarries lie within three miles of a safe and commodious shipping harbour, near Conway. They are of immense extent, and quite inexhaustible. The quality of the slate has been rigorously tested, and found proof in delicate polish, free from chipping in sawing, &c., and every way adapted for general and refined uses. The quarries are now open for immediate returns.

The following calculations on prices, at present rates of contracts, &c., will show the high value of this important addition to the foregoing mines and quarries belonging to the company:—

Contracts are now being made to raise, dress, square, &c., and carry from the quarry to the wharf, slabs of any skantling, at 15s. per ton, all expenses included.  
Freight from wharf to Conway, and from thence by railway—say, to London, including, &c., 7s. 6d. per ton.  
One quarryman and assistant, contracts, as above, for 40 tons of slabs per month.  
The prices of these slabs at market are—2s. 10s. to 3s. 10s. per ton.  
Therefore, 12 contracts in one month will produce 480 tons of slabs in the market—say, in London, at an expense of ..... £540 0 0  
Let the superintendence, incidentals, royalties, &c. be ..... 60 0 0

Making the gross cost to the company of 480 tons of slabs ..... £600 0 0  
Which sell even at lowest price for ..... 1200 0 0

Therefore one month's profit on 12 such contracts, is ..... £600 0 0

Or yearly profit on like work, or 12 contracts alone ..... £7200 3 0  
And these contracts may be doubled, tripled, or quadrupled, &c., in proportion to the market sales. (See respective reports.)—In a word, this company presents a source of investment of positive worth, of real standard excellence, that cannot be the object of speculation; neither figurative nor doubtful, nothing uncertain; everything fair and open, and truthful, and such as must insure a high interest to the shareholders.

## SUMMARY OF THE CONDITIONS AND RULES PROPOSED TO THE COMPANY FOR THEIR ADOPTION.

1. The affairs of the company to be managed by a chairman and board of directors—three of whom shall form a quorum.
2. Candidates for election as chairman or directors, must each possess at least 50 shares.
3. General meetings of shareholders shall take place every half-year, when all questions of the affairs of the company shall be decided by a majority of votes present; holders of 5 shares to have one vote; of 10, two votes; of 20, three votes; of 50, four votes; of 100, five votes; of 200, six votes; and of every 100 in addition an additional vote.
4. The shares are numbered in order, and made transferable to bearer—therefore, no holder of scrip can be responsible for a greater amount than that due on the shares in his own possession.
5. Should any future call be required, the amount shall not exceed 10s. on each £5 share. Two months' notice must be given for that purpose in the *Mining Journal*, *London Times*, and *Carnarvon and Denbigh Herald*; and in default of payment in three months after the above notice, the numbers not paid up in accordance with that call, shall be forfeited and advertised accordingly.
6. The directors shall meet in a board room, attached to the company's offices, on the first Tuesday of each month at one o'clock, for the general transaction of business.
7. The accounts of the company shall be audited, and produced at the general half-yearly meeting, when dividends shall be declared and appropriated in the usual manner.
8. The board-room shall be open for the directors on every Tuesday, at Eleven o'clock. The secretary may summon a board on any day in case of emergency; and the directors may call a special meeting at any time, by giving one week's notice.

## NOTICE.

The first general meeting of shareholders will be held on Tuesday, the 1st day of October next, at one o'clock, in the company's offices, 24, Lincoln's Inn-fields, London, when the board of directors and committee of management shall be declared for the ensuing 12 months.

## BANKERS.

The National Provincial Bank of England; and the North and South Wales Bank.

Messrs. Richard Thomas and Son, 3, Fen-court, Fenchurch-street, London.

Griffith Jones Williams, Esq., Dolgelly; and William Griffith, Esq., Llanwrst.

St. Pierre Foley, C.E., &c., (Mining Company of Wales, &c.), No. 24, Lincoln's Inn-fields, London.

To whom application for shares, &c., is to be made.

N.B.—Arrangements are made also to place under the management of the company, against the first day of general meeting, the celebrated and valuable mines of Cwm Synlog, Coning, &c., situated in the very centre of the ancient British Fforest district of Cardiganshire.—July 18, 1850.

## IMPORTANT DISCOVERY OF SILVER LEAD MINES, NEAR BRISTOL.

The attention of persons interested in MINING PROPERTY is particularly directed to these valuable SILVER-LEAD MINES, recently discovered, and proved at considerable expense. It is proposed to FORM A COMPANY TO WORK these MINES, to be called the ITCHINGTON HILL SILVER-LEAD MINING COMPANY, to be conducted on the Cost-book Principle, which, by Act of Parliament, exempts shareholders from any liability beyond the amount subscribed on their shares.

The sett, or grant, comprises about 80 acres, and is held direct from the Lord of the Manor, at 1-20th duty, or 5 per cent. on the produce, for a period of 21 years, from June, 1850. The situation is highly advantageous, being only 10 miles from Bristol, four from the Wickwar Station, on the Birmingham and Bristol Railway, and within 6 of the River Severn. Several very valuable lodes have been discovered, three of which have been explored to some extent, showing throughout indications of a highly metalliferous quality, which the reports will fully explain, and samples seen at the Company's offices.

From the peculiar situation of the lodes, and the natural character of the district, it is considered that expensive machinery will be unnecessary.

A considerable sum of money has been expended on the only required speculative outlay, the lead being actually discovered. Gossan, fluor-spar, sulphuret of barites, and other indications of there being a largely productive mine, have been found, fully justifying the shareholders in anticipating a return on the capital invested, equal to the most valuable mine now working.

The mine is to be divided into 3073 shares; 2273 of these will be issued to the public, on which £2 per share is to be paid on making the Cost-book; this sum the proprietors are fully assured will carry on the works effectually.

Various assays have been made, and the ore is found to be exceedingly rich in silver; one by Mr. Clements, of the Panther Lead-Works, Bristol, produced 504 per cent. of lead, and 71 ozs. 1 dwt. of silver to the ton of ore, and valued by him at £19 10s. per ton, as produced at the mouth of the mine; another by Mr. Johnson, of 79, Hatton-garden, Lane do, produced 12 ozs. of lead and 68 ozs. of silver to the ton. The price of lead or silver averages about £11 per ton.

Applications for shares to be made to Mr. S. J. Green, at the offices of the Company, No. 5, Hart-street, Bloomsbury-square, London, where specimens of the ore may be seen; and to Mr. Wray, Alverstoke, near Bristol, with whom the cost-book will lie for signature, for the convenience of country shareholders.

# STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 30th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 20th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA.—On the 20th and 29th of every month. CONSTANTINOPLE.—On the 29th of the month. ALEXANDRIA.—On the 30th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo apply at the company's offices, No. 123, Leadenhall-street, London; and Oriental-place, Southampton.

## CRAUFORD HOUSE.

# CLASSICAL, MATHEMATICAL, & CHEMICAL SCHOOL, MAIDENHEAD, BERKS.

The importance of scientific knowledge being generally felt, Mr. J. D. M. PEARCE, A.M., intends, in order to render his usual Chemical Course more complete, to erect a commodious laboratory, where his pupils may be able, after Christmas, to pursue those branches of analysis which are essential to the Agriculturist, Manufacturer, Engineer, and Emigrant; and he thus hopes to enhance the estimation in which his SCHOOL has been hitherto held.

Every branch of a polite and useful education is embraced—the Mathematics are thoroughly taught, and FRENCH is constantly spoken by the pupils, under the direction of an efficient native.—GERMAN is also spoken, and Singing taught in classes.—Every attention is paid to moral and religious culture, and the situation and arrangements of the establishment are such, that during four years it has been completely exempted from illness.—Prospectuses and references will be forwarded on application.  
*Chemical Refractor*—H. D. Pepper, Esq., Consulting Chemist to the Royal Polytechnic Institution, London.

# SCHOOL OF MINERALOGY, CHEMISTRY, AND GENERAL SCIENCE.

## MESSRS. NESBITT'S ACADEMY.

No. 38, KENNINGTON-LANE, LAMBETH, NEAR LONDON.

In this SCHOOL, in addition to all the branches of a good education, EVERY FACILITY is AFFORDED for obtaining a knowledge of ANALYTICAL CHEMISTRY and NATURAL SCIENCE, as applied to the Arts, Manufactures, and Agriculture.

The pupils are practically taught in the Laboratories, which are fitted up with every essential for the most extensive chemical investigations.  
Mr. Nesbitt's works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, &c., may be had of all booksellers.  
References.—Dr. D. B. Reid, F.R.S.E., &c., House of Commons, Westminster; R. Prosser, Esq., C.E., Birmingham; J. L. Bullock, Esq., Editor of *Frederick's Chemical Analyst*, Conduit-street, Regent-street; J. Gardner, Esq., M.D., Editor of *Liebig's Letters*, &c., Mortimer-street, Portland-place; and W. Shaw, Esq., Strand, London.

# GEOLOGY.—PERSONS wishing to become ACQUAINTED with this interesting BRANCH OF SCIENCE will find their STUDIES greatly FACILITATED by means of ELEMENTARY COLLECTIONS, which can be had at Two, Five, Ten, Twenty, or Fifty Guineas each, arranged and sold by Mr. TENNANT (Mineralogist to Her Majesty), 149, STRAND, LONDON.

A Collection for Five Guineas, which will illustrate the recent works on Geology, contains 300 specimens, in a Mahogany Cabinet, with five trays—viz.:  
MINERALS which are the components of rocks, or occasionally imbedded in them:—Quartz, Agate, Calcedony, Jasper, Garnet, Zircon, Hornblende, Augite, Asbestos, Feldspar, Mica, Talc, Tourmaline, Calcareous Spar, Fluor, Selenite, Baryta, Strontite, Salt, Sulphur, Plumbago, Bitumen, &c.

METALLIC ORES:—Iron, Manganese, Lead, Tin, Zinc, Copper, Antimony, Silver, Gold, Platina, &c.

ROCKS: Granite, Gneiss, Mica Slate, Clay Slate, Porphyry, Serpentine, Sandstones, Limestone, Basalt, Lava, &c.

FOSSELS from the Lias, the Wealden, Ludlow, Devonian, Carboniferous, Lias, Gault, Wealden Chalk, Plastic Clay, London Clay, and Crag Formations, &c.

Mr. TENNANT gives PRIVATE INSTRUCTION in MINERALOGY, with a view to FACILITATE the STUDY OF GEOLOGY, and of the application of Mineral Substances in the Arts, illustrated by an extensive Collection of Specimens, Models, &c.

# EASTERN COUNTIES RAILWAY.—LOWESTOFT AND YARMOUTH.—PASSENGERS taking RETURN TICKETS will be CONVEYED at SINGLE FARES by ALL TRAINS on each SATURDAY, from PETERBOROUGH to LOWESTOFT and to YARMOUTH, and they can return by any Train up to and including the Up-Mail Train on the following Monday night.

Week-day Trains from Peterborough, at	Reach Yarmouth, at	Lowestoft, at
8 20 a.m.	3 0 p.m.	2 15 p.m.
1 0 p.m.	5 50 "	6 0 "
5 45 "	" "	11 0 "
10 55 "	3 30 a.m.	" "
From Lowestoft, at	From Yarmouth, at	Reach Peterborough, at
9 0 a.m.	6 30 a.m.	11 55 a.m.
2 15 p.m.	9 15 "	3 55 p.m.
8 45 "	3 20 p.m.	9 45 "
" "	9 0 "	1 53 a.m.

July 24, 1850. By order, C. F. RONEY, Secretary.

# INSURANCE AGAINST RAILWAY ACCIDENTS BY THE RAILWAY PASSENGERS' ASSURANCE COMPANY.

Empowered by Act of Parliament, 12 and 13 Victoria, cap. 40.

Capital—ONE MILLION.

CHAIRMAN—JOHN DEAN PAUL, Esq.  
DEPUTY-CHAIRMAN—G. BERKELEY HARRIS, Esq.

TRAVELLERS by RAILWAY can now OBTAIN TICKETS at the principal RAILWAY STATIONS to INSURE AGAINST ACCIDENT during a SINGLE JOURNEY, irrespective of distance, for the following amounts:—

£1000 in a first-class carriage, at a premium of ..... 3d.  
£500 in a second-class ditto ditto ..... 2d.  
£200 in a third-class ditto ditto ..... 1d.

For the convenience of frequent travellers, Periodical Tickets are also issued at the Railway Stations by the provincial agents, and at the Company's offices, 3, Old Broad-street, London, on the following terms:—

To insure £1000 for 12 months, at a premium of ..... 20s.  
ditto £200 ditto ..... 5s.

With the option of travelling in any class carriage, and on any railway in the kingdom. The total amount insured